HUMIDITY

ACCESS CONTROL
ACTUATORS & DAMPERS
ALARMS & INDICATION
ELECTRICAL WIRING MATERIALS
ENCLOSURES
FLOW
GAS & SPECIALTY SENSORS
HAZARDOUS LOCATIONS
HUMIDITY
LEVEL & LEAK DETECTION
LIGHTING CONTROLS
MOTOR CONTROLS
NETWORK & WIRELESS
PANEL FABRICATION
PNEUMATICS & FITTINGS
POWER MONITORING & PROTECTION
POWER SUPPLIES
PRESSURE
RELAYS & CONTACTORS
TEMPERATURE SENSORS & TRANSMITTERS
THERMOSTATS & CONTROLLERS
TOOLS & TEST EQUIPMENT
TRANSDUCERS

Kele Carries Nine Brands to Meet Your Sensing Needs.

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Amphenol Advanced Sensors

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Kele

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Kele

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Kele

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setra

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Kele

HUMIDITY

Products manufactured in the United States

NEW! Products that are new to the catalog

HUMIDITY

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kele.com

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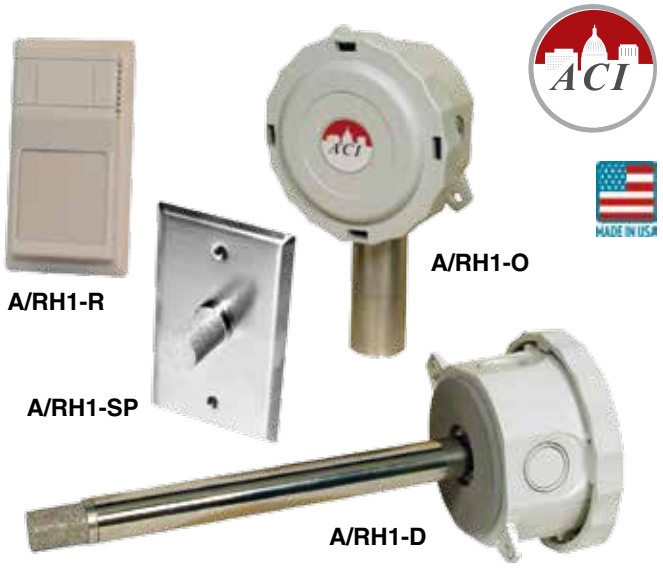
AUTOMATION COMPONENTS BAS/HVAC RH TRANSMITTERS

A/RH1 SERIES

DESCRIPTION

Model A/RH1 Relative Humidity Transmitters provide RH readings at ±1% accuracy using a ceramic resistive sensor offering a 20% to 90% operating range. The transmitters come in wall, duct, and OSA mounting styles. They have multiple field-selectable outputs, including 4-20 mA, 0-10V, and 0-5V signals. The supply power is also selectable as 24 VDC or 24 VAC.



FEATURES

- ***Accuracy of ±1%***
- ***Duct and OSA twist-off weatherproof housing***
- ***24 VDC or 24 VAC power (field-selectable)***
- ***4-20 mA, 0-10V, or 0-5V signal (field-selectable)***
- ***Field-calibratable***
- ***Optional temperature sensor***

SPECIFICATIONS

Supply Voltage	12-40 VDC or 24 VAC, selectable
Accuracy	±1% @ 77°F (25°C) over a selectable 20% span from 50 to 70%, 60 to 80%, or 70 to 90% RH
Thermal Effect	<0.005% per °F (<0.01 per °C)
Signal Output	4-20 mA, 0-5 VDC, 0-10 VDC (field selectable)
Measurement Range	0% to 100%
Sensing Technology	Capacitive
Operating Temperature	
Room	32° to 122°F (0° to 50°C)
Duct/OSA	-40° to 140°F (-40° to 60°C)
Enclosure	
Room	Plastic Delta-style
Duct/OSA	Plastic weatherproof

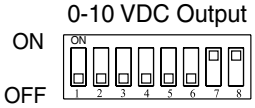
Dimensions	
Room	3.8"H x 2.8"W x 0.9"D (9.8 x 7 x 2.3 cm)
Duct	3.6" (9 cm) Ø head with 8.15"L (20 cm) probe 0.75" (1.9 cm) Ø
OSA	3.6" (9 cm) Ø head with 3.0"L (7.6 cm) probe 1.4" (3.6 cm) Ø
Weight	
Room	0.22 lb (0.1 kg)
Duct	1.2 lb (0.54 kg)
OSA	0.6 lb (0.27 kg)
Wall Pack	0.22 lb (0.1 kg)
Approvals	CE, RoHS
Warranty	5 years

WIRING

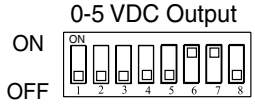
Output Selection Switches (SW 1)

4-20 mA Output

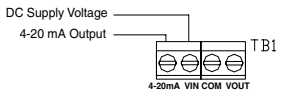
0-10 VDC Output



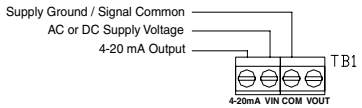
0-5 VDC Output



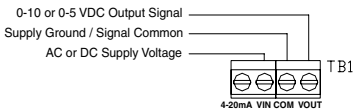
2 Wire Current Output Signal



3 Wire Current Output Signal



Voltage Output Signal



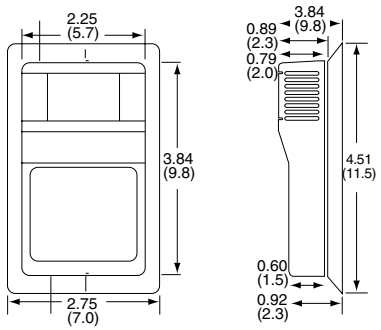
HUMIDITY

AUTOMATION COMPONENTS BAS/HVAC RH TRANSMITTERS

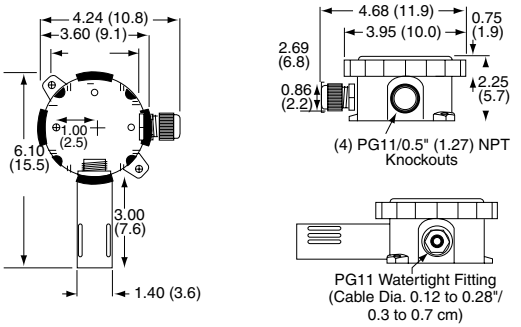
A/RH1 SERIES

DIMENSIONS

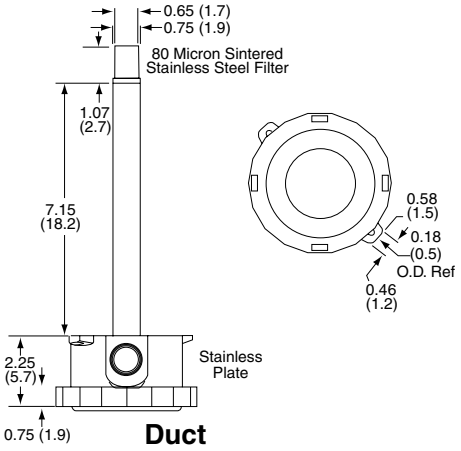
in
(cm)



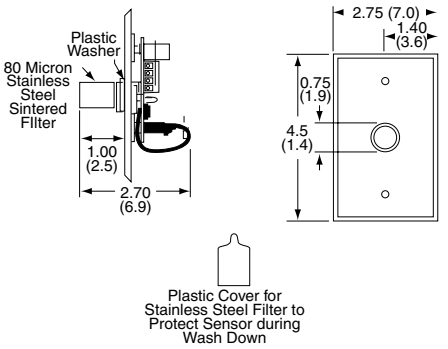
Room



Outside



Duct



Stainless Plate

ORDERING INFORMATION

MODEL	DESCRIPTION	
A/RH1	1% accuracy humidity transmitter	
	(5070)	20% Range 50 to 70%
	(6080)	20% Range 60 to 80%
	(7090)	20% Range 70 to 90%
	AN	Type III 10,000Ω thermistor
	CP	Type II 10,000Ω thermistor
	20K	20,000Ω thermistor
	100	100Ω 385 PT RTD
	IK	1,000Ω 385 PT RTD
	R	Room
	D	Duct
	O	Outside air
	SP	Wall plate

A/RH1 - (5070) - AN - R

Example: **A/RH1- (5070) - AN-R** Room humidity transmitter with 1% accuracy over 50 to 70% range and Type III 10,000Ω thermistor

RELATED PRODUCTS		PAGE
DCP-1.5-W	Power supply, 24 VAC IN to 24 VDC OUT	**995**
DCPA-1.2	Power supply, 120 VAC IN to 24 VAC/24 VDC OUT	**994**
691-K0A	Control transformer, 120:24 VAC, 40 VA, Class 2	**979**

WALL-MOUNTED HUMICAP® HUMIDITY AND TEMPERATURE TRANSMITTER

HMW90 SERIES

DESCRIPTION

The **Wall-Mounted Vaisala HMW90 Series HUMICAP® Humidity and Temperature Transmitters** measure the relative humidity and temperature of indoor environments, where high accuracy, stability, and reliable operation are required. The **HMW90 Series** includes models for both current and voltage output. These flexible transmitters offer a variety of options and features. Transmitters are available with an optional display. The **HMW90 Series** humidity transmitters are quick and easy to install. The wiring is connected secured to the wall through the back plate and the electronics with the sensors can then be easily snapped on. Dip switches for transmitter configuration can be accessed when the enclosure is open.

HMW90 Series

FEATURES

- ***Easy installation, configuration and field adjustment***
- ***±1.7% accuracy***
- ***Optional relay (HMW93 only)***
- ***NIST calibration certificate included***
- ***Long term stability with HUMICAP® 180R sensor***

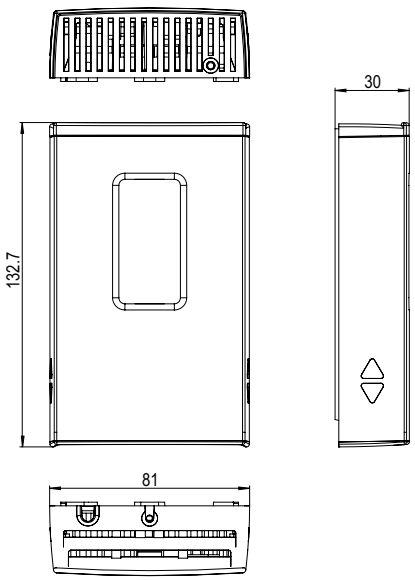
APPLICATION

- ***Museums and archive facilities***
- ***Production and warehouse facilities***
- ***Data centers***
- ***Laboratories***
- ***Testing environments***

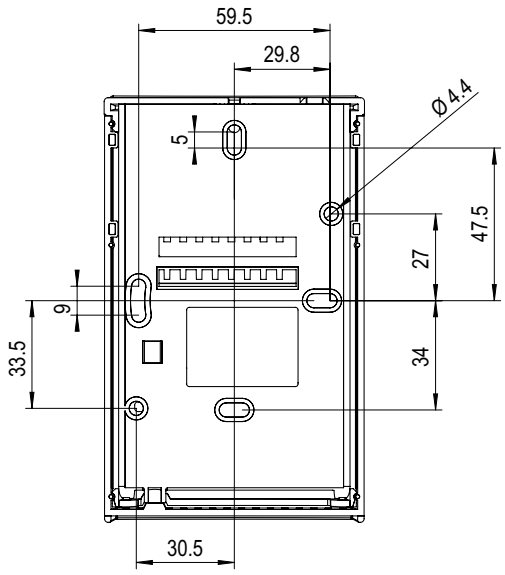
SPECIFICATIONS

Accuracy	±1.7% RH @ 50° to 104°F (10° to 40°C) from 0 to 90% RH
Stability	±0.5% RH/year
Supply Voltage	
HMW92	10 to 28 VDC
HMW93	18 to 35 VDC, 24 VAC ±20%, 50/60 Hz
Signal Output	
HMW92	4-20 mA
HMW93	0 to 5 VDC, 0 to 10 VDC
Maximum Output Impedance mA	
HMW92	500Ω
Minimum Output Impedance VDC	
HMW93	10 kΩ minimum
Measurement Range	0 to 100% RH, 23° to 131°F (-5° to 55°C)
Sensing Technology	HUMICAP® 180R
Operating Temperature	23° to 131°F (-5° to 55°C)
Enclosure	ABS/PC
Enclosure Rating	IP30, UL-V0 approved
Wiring Terminations	Screw terminals
Dimensions	5.22"H X 3.19"W X 1.18"D (13.27 X 8.1 X 3.0 cm)
Approvals	CE
Weight	0.34 lb (0.16 kg)
Warranty	1 year

DIMENSIONS



HMW90 Series Dimensions



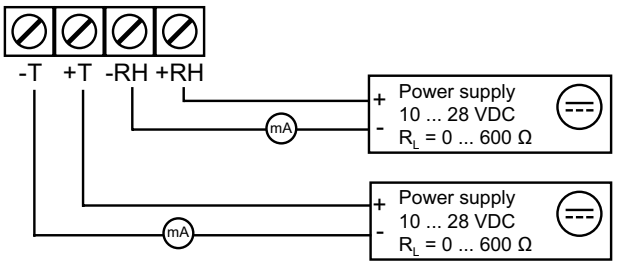
HMW90 Series Mounting Base Dimensions

WALL-MOUNTED HUMICAP® HUMIDITY AND TEMPERATURE TRANSMITTER

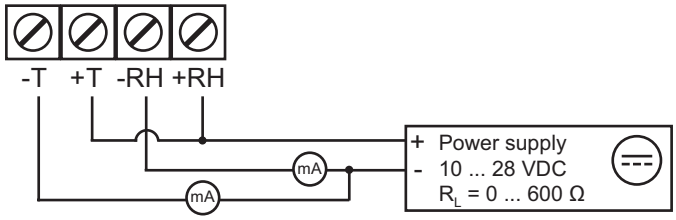
HMW90 SERIES

WIRING

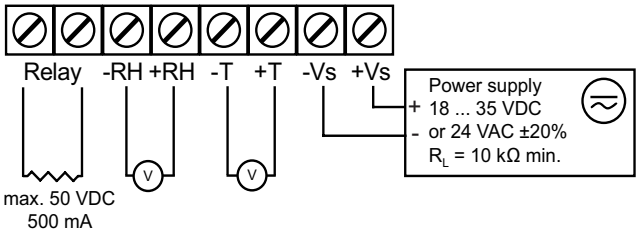
HMW92 Wiring (2 Power Supplies)



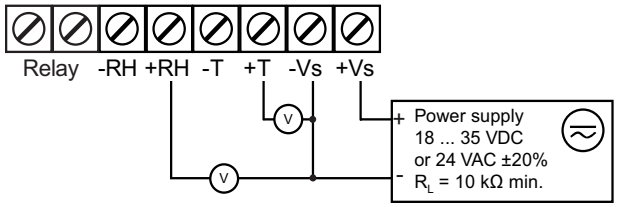
HMW92 (Three-wire connection)



HMW93 Wiring



HMW93 (Three-wire connection)



ORDERING INFORMATION

MODEL	DESCRIPTION
HMW92	Humidity and Temperature transmitters with two current outputs
HMW92D	Humidity and Temperature transmitters with two current outputs, with visible display
HMW93	Humidity and Temperature transmitters with two voltage outputs
HMW93D	Humidity and Temperature transmitters with two voltage outputs, with visible display

	RELATED PRODUCTS	PAGE
HTM10	HMW90 series replacement sensor element	
DCPA-1.2	Power supply, 120 VAC IN to 24 VAC/24 VDC OUT	**994**
691-K0A	Control transformer, 120:24 VAC, 40 VA, Class 2	**979**
DCP-1.5-W	Power supply, 24 VAC IN to 24 VDC OUT	**995**

MULTIFUNCTION HUMIDITY/TEMPERATURE TRANSMITTER

E31 SERIES

DESCRIPTION

The **E+E E31 Series Multifunction Humidity/Temperature Transmitter**s offer precise measurement of humidity and temperature with field selectable analog outputs for both parameters. The unit can also be ordered with enthalpy, dew point, and wet bulb. Two-point calibration can be performed using push-buttons on the circuit board-no need for dismounting which makes it ideal for regulatory environments. Built-in LEDs indicate transmitter status and errors. An optional display is available for local indication of measured values and minimum and maximum values.

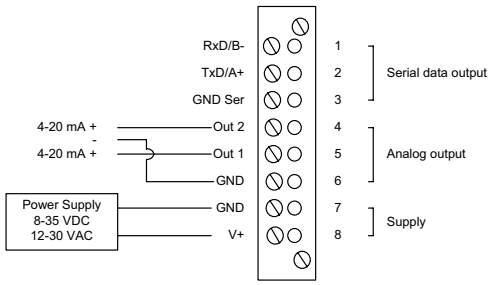
FEATURES

- ***Accuracy of ±1.3% RH***
- ***Derived values for dew point, enthalpy, and wet bulb***
- ***Simple calibration***
- ***Stainless steel sintered filter***
- ***Optional display available***
- ***Dual output signals***
- ***RS232 output***

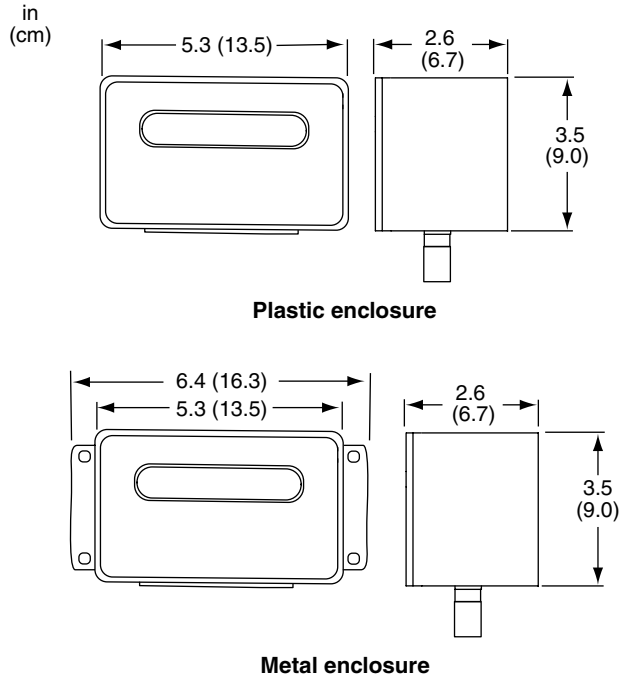
SPECIFICATIONS

Accuracy	
Humidity	±1.3% RH, <90% RH, 5° to 104°F (-15° to 40°C)
Temperature	±0.27°F (±0.14°C) ±0.06
Supply Voltage	
	0-5/10 VDC: 8-35 VDC, 40 mA; 12-30 VAC, 1.0 VA
4- 20 mA:	8-35 VDC, 80 mA; 12-30 VAC, 1.9 VA
Signal Output	Field selectable: 4-20 mA, 0-20 mA, (500 max load), 0-5 V, or 0-10 V,
Communication	Serial interface RS232C
Measurement Range	
Humidity	0 to 100% RH
Temperature	-40° to 120°F (-40° to 48.9°C)
Sensing Technology	
Humidity	Capacitive
Temperature	Pt1000 RTD, 385 curve
Sensor Protection	Stainless steel sintered filter
Display Type	Optional, two line, alphanumeric LCD, English units
Display	
Dewpoint	-40° to 120°F (-40° to 48.9°C)
Enthalpy	0-64 Btu/lb (0 to 400 kJ/kg)
Wetbulb	0° to 100°F (-17.8° to 37.8°C)
Operating Temperature	
	Display: -40° to 140°F (-40° to 60°C)
No Display	-4° to 122°F (-20° to 50°C)
Enclosure	NEMA 4, IP65
Wiring Terminations	Screw terminals
Warranty	1 year

WIRING



DIMENSIONS



MULTIFUNCTION HUMIDITY/TEMPERATURE TRANSMITTER

E31 SERIES

ORDERING INFORMATION

MODEL	DESCRIPTION
E31*	Humidity and temperature transmitter, 8 to 35 VDC, 12 to 30 VAC
	HOUSING
M	Humidity and temperature transmitter with metal housing
P	Humidity and temperature transmitter with polycarbonate housing
	APPLICATION
A	Wall mount
B	Duct mount
D	Wall mount with remote sensing probe and 6.6' (2m) cable
	PROBE LENGTH (MODEL "B" ONLY)
5	Probe length, 7.9" (200 mm)
6	Probe length, 15.8" (400 mm)
	DISPLAY
-	No display
D	LCD display
	ALARM OUTPUT
-	No alarm relay
S	With alarm relay

Chart 1
Physical Parameters
A) - RH
B) - temperature
C) - dew point
E) - wet bulb
I) - specific enthalpy

Chart 2
2) Output Signals
2) - 0 to 5 VDC
3) - 0 to 10 VDC

Chart 3	
3) Scaling (T - temperature, Td - dew point, Tf - frost point)	
05	0° to 100°
12	-40° to 120°

Example: **E31MA5DS** EE31 duct humidity and temperature transmitter with polycarbonate housing, wall mount, probe length, 7.9", LCD display, with alarm relay.

* Each E31 is shipped with setup software and required cable.

RELATED PRODUCTS		PAGE
DCP-1.5-W	Power supply, 24 VAC IN to 24 VDC OUT	**995**
DCPA-1.2	Power supply, 120 VAC IN to 24 VAC/24 VDC OUT	**994**
691-K0A	Control transformer, 120:24 VAC, 40 VA, Class 2	**979**
HA010502	EE23/EE31 Radiation Shield	
HA011101	1/2" conduit connector	

1% ROOM AND DUCT MULTI-PARAMETER HUMIDITY AND TEMPERATURE TRANSMITTER

HF5 SERIES

rotronic
LEADING IN HUMIDITY MEASUREMENT

DESCRIPTION

The **Rotronic HF5 Series High Performance Multi Parameter Humidity and Temperature Transmitters** are ideal for all applications where exact measurement of humidity, enthalpy, dry bulb, wet bulb, temperatures plus other psychrometric parameters are critical. This high performance transmitter using air chip technology accurately measures relative humidity to within ±0.8% RH. The HydroClip2 probe can be individually calibrated and adjusted to increase measurement precision where you need it the most. The **HF5 Series** is available in a duct mount or wall mount configuration. This unit can be factory configured or software is available for field configuration.

HFxxW

HF5xxD

CE

FEATURES

- ***Interchangeable probe***
- ***Calculates all psychrometric values***
- ***Automatic sensor and drift compensation***
- ***Optional DIN rail mounting***
- ***Field configurable with software***

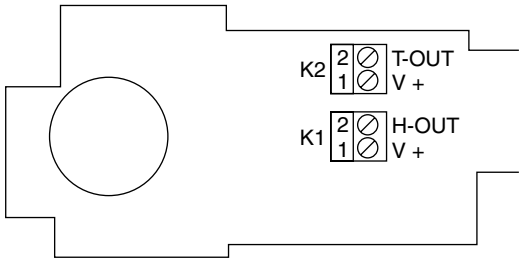
APPLICATION

The HF5 is ideal for high accuracy HVAC applications, building management systems, museums, libraries, environmental monitoring systems. The HF5 Series measures dew point, wet bulb, enthalpy, specific humidity, absolute humidity and mixing ratio.

HydroClip2

The new HygroClip2 is available in various formats: from a simple plug-in probe for handheld instruments and data loggers to the highly developed cable probes for high temperature and other special applications. As standard, they all have high accuracy, which can be increased further by specific adjustments within our patented AirChip, making every HygroClip2 a high-end product for all applications.

WIRING



Terminals	Description
K2-2: T-OUT	Temperature output (+) OUT-2
K2-1: V+	Power supply: 10…28 VDC (+)

Terminals	Description
K1-2: H-OUT	Relative humidity or dew point (+) OUT-1
K1-1: V+	Power supply: 10…28 VDC (+)

Note: Connect the + of the power supply to only one of the V+ terminals. The two terminals marked V+ are internally connected.

SPECIFICATIONS

Supply Voltage	
HF52	10 to 28 VDC, 40 mA
HF53	15 to 40 VDC, 50 mA; 12 to 28 VAC, 1.2 VA
Accuracy	±0.8% RH @ 73°F (23°C) from 5% to 95% RH
Stability	0.5% drift per year
Repeatability	0.3% RH
Long Term Stability	<1% RH/year
Response Time	RH: Typically 10 seconds for 63 % of a jump 35 to 80 %RH (1 m/sec air flow at sensor)
Temperature:	Typically 4 seconds for 63 % of a change from 23 to 80 °C (1 m/sec air flow at sensor)
Signal Output	4-20 mA
Maximum Output Impedance	500Ω
Minimum Output Impedance	1000Ω

Range	
Humidity	0-100%
Temperature	-148° to 392°F (-100° to 200°C)
Display	Optional: LCD, 1 or 2 decimals
Operating Humidity	0 to 100% non-condensing
Operating Temperature	-40° to 140°F (-40° to 60°C)
Enclosure Rating	ABS/IP65 conforms to UL94-HB
Wiring Terminations	Screw terminals/ M16 cable gland or ½" conduit adapter
Dimensions	
Case	5.1"H x 5.1"W x 1.8"D (13 x 13 x 4.5 cm)
Wall Plate	0.6" Ø x 3.5"L (1.5 x 9 cm)
Duct Probe	0.6" Ø x 8.3"L (1.5 x 21 cm)
Approvals	CE/EMC: EMC Directive 2004/108/EC
Weight	1 lb (0.45 kg)
Warranty	1 year

1% ROOM AND DUCT MULTI-PARAMETER HUMIDITY AND TEMPERATURE TRANSMITTER

HF5 SERIES

ORDERING INFORMATION

MODEL	DESCRIPTION
HF520	2-wire (loop powered), 4-20 mA
HF532	3-wire, 4-20 mA
HF534	3-wire, 0-5 V
HF535	3-wire, 0-10 V

INSTALLATION/MOUNTING	
D	Duct mount (through wall)
W	Wall mount

PSYCHROMETRIC PARAMETERS	
B	Humidity (0 to 100 %RH) and Temperature - see range below
A	Temperature & Dew / Frost point - see range below
C	Temperature & Wet Bulb temperature (Tw) - see range below
D	Temperature & Enthalpy (H) - see range below

OUTPUT RANGES	
6X	0° to 100°F (-18° to 38°C)

OPTIONAL KEYPAD AND DISPLAY	
D	Keypad and display (HF52: no backlight – HF53: w. backlight)
X	No keypad and display

ELECTRICAL CONNECTION	
3	1x ½" conduit adapter (horizontal mounting)
4	1x ½" conduit adapter (vertical mounting - type D w/o display)

DEWPOINT, WETBULB OR ENTHALPY RANGES (optional)	
4X	0° to 100°F (-18° to 38°C)
S	Hydroclip standard climate probe

HF520	D	B	6X	D	4	S

Example: HF520DB6XD4S 2 Wire psychrometric transmitter, duct mount, humidity and temperature outputs, display and HydroClip Standard Climate probe.

RELATED PRODUCTS		PAGE
691-K0A	Control transformer, 120:24 VAC, 40 VA, Class 2	**979**
DCP-1.5-W	Power supply, 24 VAC IN to 24 VDC OUT	**995**
DCPA-1.2	Power supply, 120 VAC IN to 24 VAC/24 VDC OUT	**994**

ROOM OR DUCT HUMIDITY, TEMPERATURE, DEW POINT TRANSMITTER

EE23 SERIES

DESCRIPTION

The **E+E EE23 series Humidity and Temperature Transmitter** has been developed for high-precision measurement of relative humidity and temperature.

EE23 Series transmitters are available for wall and duct mounting with or without the snap inmounting kit, which allows a quick and easy exchange of the transmitter. Outputs can be selected between voltage and current.

A special protection coating for the sensing element permits the permanent use in very polluted environments.

FEATURES

- ***Humidity and temperature calibration***
- ***NEMA 4 housing***
- ***Stainless steel sintered filter***
- ***Optional alarm switch***
- ***Optional display***

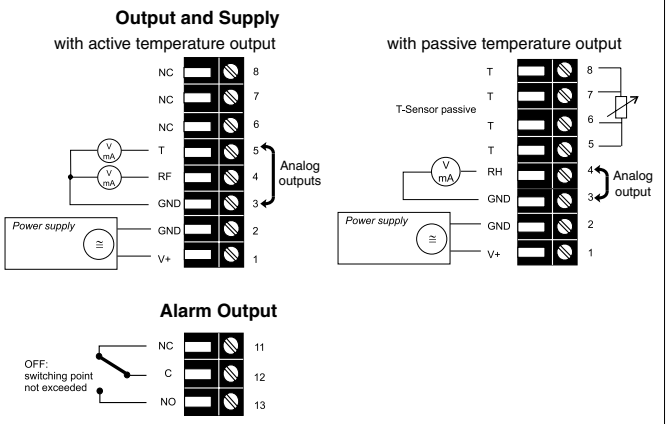
APPLICATION

- ***Green houses***
- ***Storage rooms***
- ***Swimming halls***
- ***Meteorology***

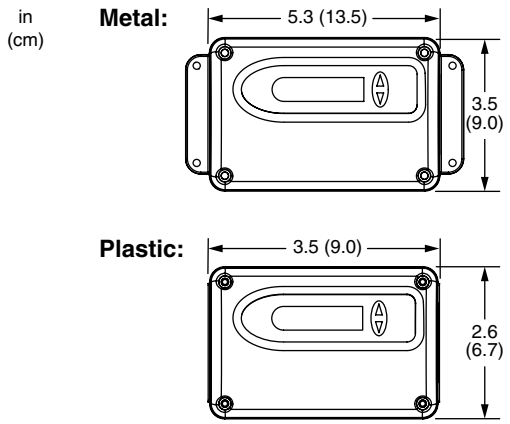
SPECIFICATIONS

Accuracy	
Humidity	±1.3%, ≤90% RH, 5° to 104°F (-15° to 40°C)
Temperature	±0.27°F (±0.14°C)
Hysteresis	< 2% RH
Supply Voltage	
	0-5 VDC: 10.5 - 35 VDC, 35 mA; 12 - 28 VAC, 0.8 VA 0-10 VDC: 15 - 35 VDC, 35 mA; 15 - 28 VAC, 1.4 VA 4-20 mA: 15 to 35 VDC, 60 mA; 15 to 28 VAC, 2.6 VA
Signal Output	4-20 mA, 0-5 VDC, 0-10 VDC
Maximum Output Impedance	470Ω
Minimum Output Impedance	5000Ω
Measurement Range	Humdity: 0-100%
Sensing Technology	Humidity: Capacitive, HC1000-200 Temperature: 1000Ω Platinum (class A, DIN EN 60751)
Sensor Protection	sintered stainless steel filter
Operating Temperature	
Non-display	-40° to 140°F (-40° to 60°C)
With display	-22° to 140°F (-30° to 60°C)
Display	LCD, English units
Enclosure	Polycarbonate or Aluminum alloy
Enclosure Rating	NEMA 4 (IP65)
Wiring Terminations	Screw terminals maximum size wire AWG 16 (1.5 mm2)
Approvals	CE
Warranty	1 year

WIRING



DIMENSIONS



Both metal and plastic casings are 2.6" (6.7 cm) deep

ROOM OR DUCT HUMIDITY, TEMPERATURE, DEW POINT TRANSMITTER

EE23 SERIES

ORDERING INFORMATION

MODEL	DESCRIPTION
EE23	Humidity and temperature transmitter, 8 to 35 VDC, 12 to 30 VAC
	HOUSING
M	Humidity and temperature transmitter with metal housing
P	Humidity and temperature transmitter with polycarbonate housing
	APPLICATION
A	Wall mount
B	Duct mount
	PROBE LENGTH (MODEL "B" ONLY)
5	Duct probe length, 7.9" (20.0 cm)
6	Duct probe length, 15.8" (40.0 cm)
	DISPLAY
–	No display
D	LCD display
	ALARM OUTPUT
–	No alarm relay
S	With alarm relay
	AB RH and temperature
	OUTPUT
2	0-5 VDC
3	0-10 VDC
6	4-20 mA
	RANGE FOR TEMPERATURE
05	0° to 100°F (-17° to 37.8°C)
10	-20° to 120°F (-28.9° to 48.9°C)
12	-40° to 120°F (-40° to 48.9°C)
15	20° to 120°F (-6.7° to 48.9°C)

EE23 P B 6X D S AB 2 12

Example: **EE223PB6DSAB212** EE23 duct humidity and temperature transmitter with plastic case, 15.8" (40.0 cm) probe, LCD display, 0-5 VDC outputs for RH and temperature (0-100%; -40° to 120°F (-40° to 120°C)

RELATED PRODUCTS		PAGE
DCP-1.5-W	Power supply, 24 VAC IN to 24 VDC OUT	**995**
DCPA-1.2	Power supply, 120 VAC IN to 24 VAC/24 VDC OUT	**994**
691-K0A	Control transformer, 120:24 VAC, 40 VA, Class 2	**979**
HA010502	EE23/EE31 Radiation Shield	
HA010502	1/2" conduit connector	

1% AND 2% WALL, DUCT AND OSA HUMIDITY TRANSMITTERS

HT829, HT839

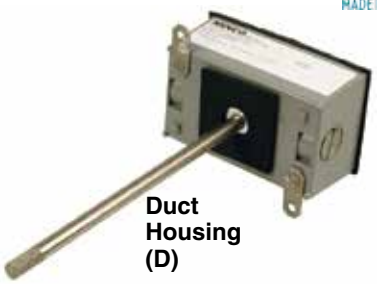
MINCO

DESCRIPTION

The **Minco Model HT829 Relative Humidity Transmitter** measures 0% to 100% RH over a range of -10° to 185°F (-23° to 85°C). The standard two-wire, 4-20 mA output provides low-cost space, duct, and outdoor monitoring or process and industrial building control. A temperature sensor built into the integrated circuit provides temperature compensation over the full temperature range.The **HT839 Series** has temperature transmitter output.

Room Housing (S)

MADE IN U.S.A.



Duct Housing (D)

OSA / Wall Housing (O)

FM APPROVED

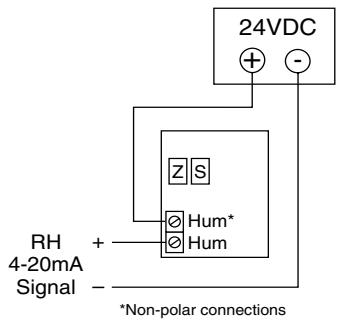
FEATURES

- ***Temperature-compensated IC sensor***
- ***One-point field calibration, RH or temperature***
- ***Weatherproof housing for OSA and duct***
- ***1% or 2% RH accuracy***
- ***Sintered filter***

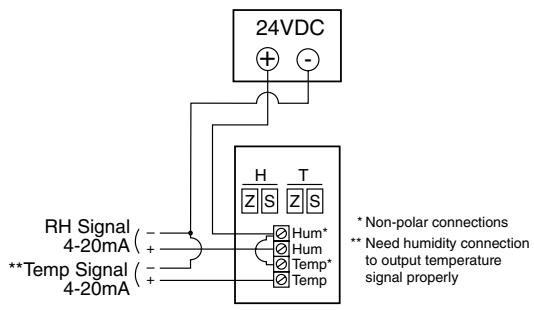
SPECIFICATIONS

Accuracy	
1% units	±1% from 10% to 80% RH
2% units	±2% from 0% to 90% RH
Time Constant	60 sec in slow-moving air
Supply Voltage	9.4 VDC min to 35 VDC max
Signal Output	Two-wire, 4-20 mA over 0% to 100% RH and temperature (HT839)
Maximum Output Impedance	730Ω @ 24 VDC (Power supply - 9.4) / 0.02 A = Ω
Sensing Technology	Capacitive monolithic IC (Humidity)
Sensor Protection	Sintered filter (Humidity)
Calibration	One-point adjustment
Adjustments	Zero, noninteracting
Operating Temperature	
Room	-10° to 150°F (-23° to 66°C)
Duct/OSA	-10° to 185°F (-23° to 85°C),
Wiring Terminations	Nonpolar terminals, connect either way (22-14 AWG wire)
Dimensions	
Room	4.5"H x 2.8"W x 1.5"D (11 x 7 x 4 cm)
Duct	4.6"L x 2.9"W x 2.3"D (22 x 7.3 x 5.7 cm), 4.6" (11.8 cm) probe length 0.38" (0.95 cm) Ø
OSA	10.2"L x 2.7"W x 2.3"D (26x 7 x 5.7 cm), 8" (20 cm) probe length 1.25" (3.2 cm) Ø
Weight	
Room	0.3 lb (0.13 kg)
Duct	1.1 lb (0.5 kg)
OSA	1.16 lb (0.53 kg)
Warranty	3 years

WIRING — HT829, RH ONLY



WIRING — HT839, RH AND TEMPERATURE



1% AND 2% WALL, DUCT AND OSA HUMIDITY TRANSMITTERS

HT829, HT839

ORDERING INFORMATION

MODEL	DESCRIPTION
HT829	Relative humidity transmitter only
HT839	Relative humidity transmitter and temperature transmitter
D	Duct mount, weather resistant box, 8" probe
O	Outside air mounting, weather resistant box with weather shield
S	Space room/office mounting
1	4-20 mA DC output
N1	1% RH from 10/80% @ 25°C, temperature matched at 0°C with NIST certificate
N2	2% accuracy from 0/90% @ 25°C, temperature matched at 0°C with NIST certificate
S2	2% accuracy from 0/90% @ 25°C, no calibration data
EN	Range codes per Minco letter ranges (-20°/140°F) or (-29°/60°C) (**HT839** only)
S	Range codes per Minco letter ranges (0°/100°F) or (-18°/38°C) (**HT839** only)
A	Range codes per Minco letter ranges (20°/120°F) or (-7°/49°C) (**HT839** only)
BI	Range codes per Minco letter ranges (30°/130°F) or (-1°/54°C) (**HT839** only)
N	Range codes per Minco letter ranges (32°/122°F) or (0°/50°C) (**HT839** only)
H	Range codes per Minco letter ranges (40°/90°F) or (4°/32°C) (**HT839** only)
--	Range codes per Minco letter ranges in the catalog (**HT839** only)
SX	Special range on next item line, -xxx/-yyyE, i.e., -20°/120°F (**HT839** only)

HT839 | **D** | **1** | **S2** | **A**

Example: HT839D1S2A 2% RH and temperature duct transmitter with 8" probe, temperature ranged for 20°/120°F

RELATED PRODUCTS		PAGE
DCPA-1.2	Power supply, 120 VAC IN to 24 VAC/24 VDC OUT	**994**
DCP-1.5-W	Power supply, 24 VAC IN to 24 VDC OUT	**995**

2% WALL, DUCT AND OSA HUMIDITY TRANSMITTERS

KH2 SERIES

DESCRIPTION

The **Kele KHR, KHD, and KHO Series Humidity Transmitters** are specifically designed for use in HVAC/BAS applications. These instruments measure relative humidity from 0% to 100%. The standard two-wire, 4-20 mA output provides low-cost humidity monitoring for building control. The RH transmitters are available with thermistor or RTD temperature sensors. They come in room (KHR), duct (KHD), and OSA (KHO) mounting styles.

OPERATION

The transmitter converts the relative humidity into a 4-20 mA signal with the latest microprocessor capacitive design. Multipoint factoryautomated calibration improves accuracy and repeatability. The optional temperature sensors, thermistor or RTD, offer direct connections to most automation systems.

FEATURES

- ***Calibration-free interchangeable sensors***
- ***Twelve-point computerized calibration***
- ***±2% accuracy (5% to 95% RH)***
- ***Replaceable sensor probe (no re-calibration)***
- ***No need to remove box to replace sensor probe***
- ***Attractive room enclosure design***
- ***Two-wire, 4-20 mA output, 0% to 100% RH***

KHR

KHD

KHO

RoHS

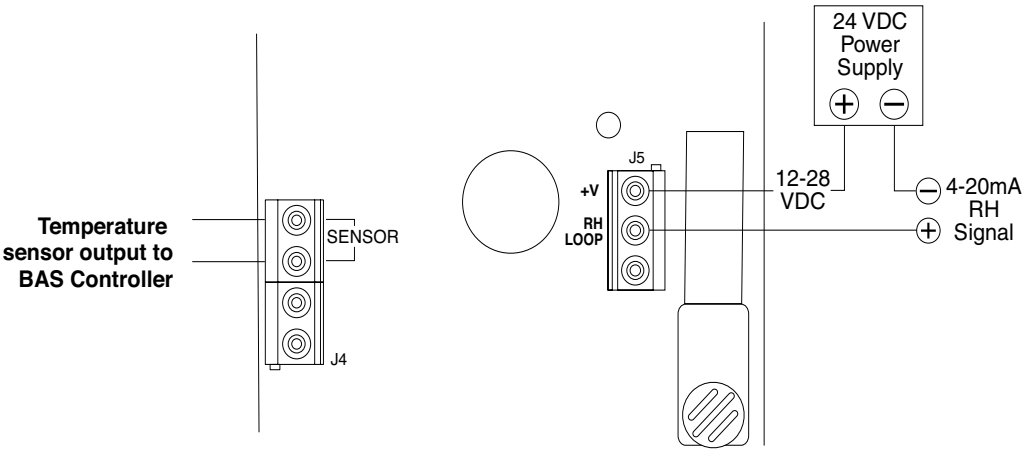
9

HUMIDITY

SPECIFICATIONS

Accuracy	2% RH @ 73°F (23°C) from 5% to 90%; (0-5% & 90%-100%) add 3%
Drift	<±0.5% per year
Thermal Effect	0.05% / °F
Supply Voltage	9.5-28 VDC
Signal Output	4-20 mA two-wire, loop-powered
Maximum Output Impedance	725 @ 24 VDC (Supply voltage - 9.5 VDC) / 0.02
Sensing Technology	Precon HS-2000 capacitive
Operating Humidity	0-100% Non-condensing
Operating Temperature	-20° to 158°F (-29° to 70°C)
Enclosure	
KHR	White plastic, UL94HB
KHD	Metal handy box
KHO	NEMA 3R plastic box
Probe	
Duct	Probe: 1/2" aluminum tube with expanded Teflon® filter
OSA	Probe: 1/2" aluminum tube with 40 micron stainless steel sintered filter
Wiring Terminations	Screw terminals
Weight (Without Options)	
KHR	0.21 lb (0.09 kg)
KHD	1.2 lb (0.59 kg)
KHO	0.52 lb (0.24 kg)
Approvals	RoHS
Warranty	18 months

WIRING

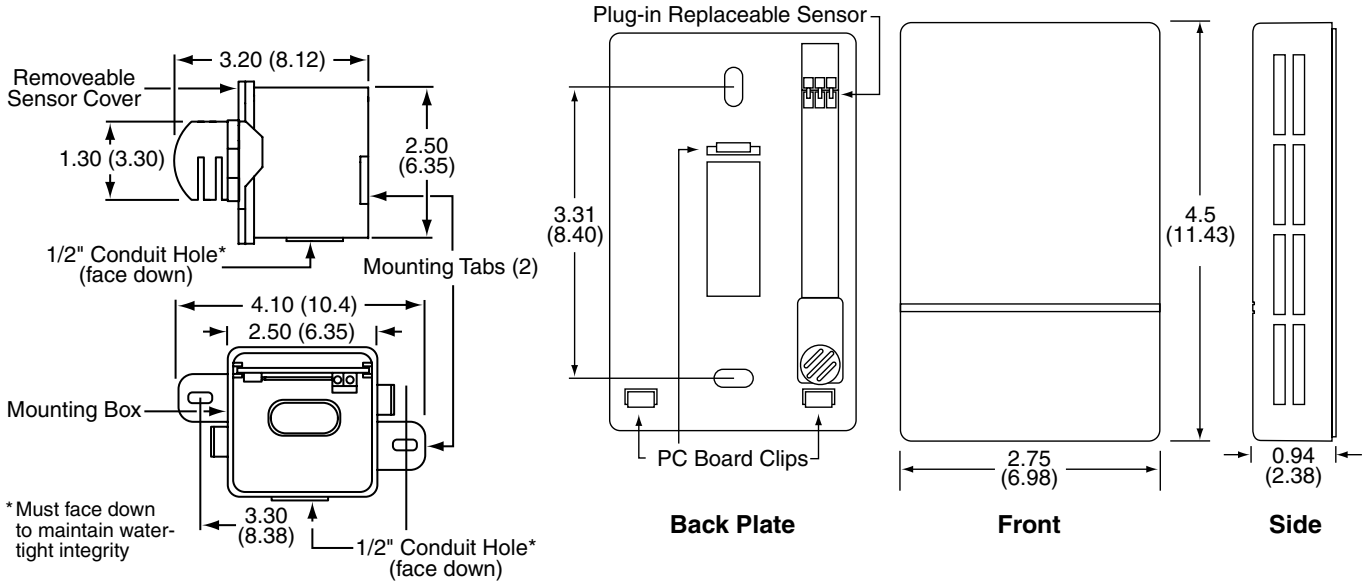


HUMIDITY

2% WALL, DUCT AND OSA HUMIDITY TRANSMITTERS

KH2 SERIES

DIMENSIONS



ORDERING INFORMATION

MODEL	DESCRIPTION	
KHD2	Duct mounted 2% humidity transmitter	
KHO2	Outside air 2% humidity transmitter	
KHR2	Wall mounted room/space 2% humidity transmitter	
	OPTIONAL TEMPERATURE RANGES	
	T3	10,000Ω thermistor @ 77˚F (26˚C), Type III
	T21	2252Ω thermistor @ 77˚F (26˚C), Type II
	T22	3000Ω thermistor @ 77˚F (26˚C), Type II
	T24	10,000Ω thermistor @ 77˚F (26˚C), Type II
	T27	100,000Ω thermistor @ 77˚F (26˚C), Type II
	T42	20,000Ω thermistor @ 77˚F (26˚C), Type IV
	T81	100Ω RTD @ 32˚F (0˚C), 385 platinum curve
	T85	1000Ω RTD @32˚F (0˚C), 385 platinum curve
	T91	1000Ω RTD @ 32˚F (0˚C), 375 platinum curve
	OPTIONS	
	CL1	Custom one color logo, KHR2 only
	WP	Weatherproof housing, KHD2 only
	XJ1	RJ11 externally-accessible communication jack (CCRJ11AD required), KHR2 only
	XJ2	Internal RJ11 communication jack, KHR2 only
	XLED	LED indicator lamp 24V AC/DC green, KHR2 only
	XMB	Momentary pushbutton switch, jumpered across sensor or pot (JP1), KHR2 only

KHD2 — **T3** — **WP**

Example: **KHD2-T3-WP** Duct mounted 2% humidity transmitter with 10,000Ω thermistor @ 77˚F (26˚C), Type III and weatherproof housing

ACCESSORIES

HSR	Replacement 2% humidity sensor for wall
HSD	Replacement 2% humidity sensor
HSO	Replacement 2% humidity sensor

RELATED PRODUCTS

		PAGE
DCPA-1.2	Power supply, 120 VAC IN to 24 VAC/24 VDC OUT	**994**
DCP-1.5-W	Power supply, 24 VAC IN to 24 VDC OUT	**995**

2% WALL, DUCT AND OSA HUMIDITY TRANSMITTERS

H_20K SERIES

DESCRIPTION

The **Kele Series H_20K Humidity Transmitters** have been specifically designed for use in HVAC/BAS applications. These instruments measure relative humidity from 5% to 90% RH with 2% accuracy and produce a two wire 4-20 mA linear output. All are available with an optional passive RTD or thermistor. The duct and OSA versions may also be fitted with a 4-20mA temperature transmitter.

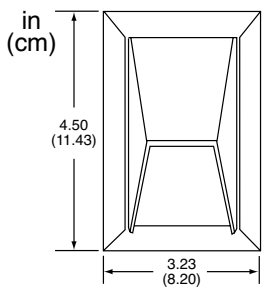
APPLICATION

The temperature compensated circuitry converts the relative humidity into a 4-20 mA signal. The optional temperature sensors, RTDs or thermistors, offer direct connection to most automation systems. On duct and OSA units, an optional 4-20 mA temperature transmitter may also be employed and is rangeable from -30° to 250°F (-34° to 121°C).

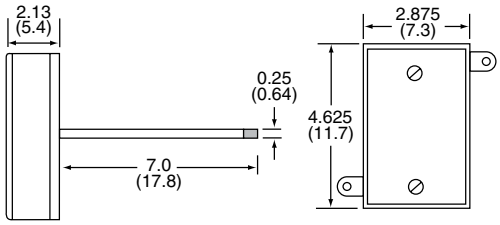
FEATURES

- ***2% accuracy (5% to 90%)***
- ***Two-wire, 4-20 mA RH output***
- ***Optional temperature thermistor***
- ***Optional temperature RTD***
- ***Optional temperature 4-20mA (duct or OSA)***

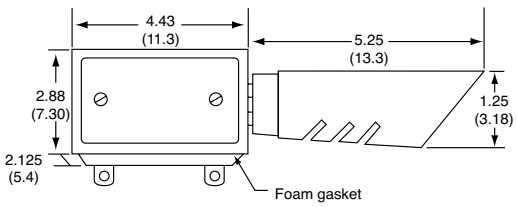
DIMENSIONS



HW20K



HD20K



HO20K

SPECIFICATIONS

Accuracy	2% RH @ 73°F (23°C) from 5% to 90% RH; (0-5% & 90%-100%) add 3%
Stability	0.5% drift per year
Thermal Effect	0.05% per °F
Supply Voltage	9.5-28 VDC
Signal Output	4-20 mA, thermistor, RTD
Maximum Output Impedance	725Ω @ 24VDC (Supply voltage - 9.5V) / 0.02
Measurement Range	
RH	0-100%
Temperature	-20° to 140°F (-29° to 60°C) (see ordering information)

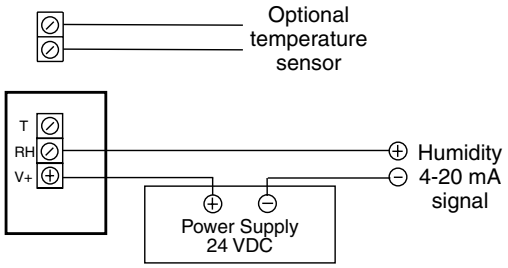
Sensor Protection (Duct and OSA)	Sintered filter
Operating Humidity	0-100% RH non-condensing
Operating Temperature	-20° to 158°F (-29° to 70°C)
Enclosure	
Room	White plastic
Duct	Weather resistant cast aluminum
Wiring Terminations	Terminal block (22 to 16 AWG)
Weight	
Room	0.3 lb (0.09 kg)
Duct	1.14 lb (0.52 kg)
OSA	1.2 lb (0.54 kg)
Approvals	RoHs
Warranty	1.5 year

HUMIDITY

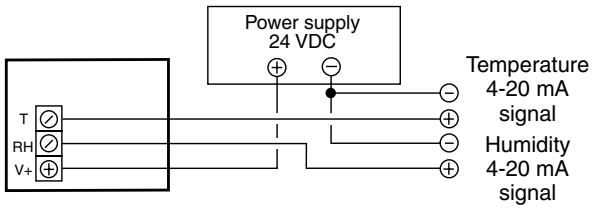
2% WALL, DUCT AND OSA HUMIDITY TRANSMITTERS

H_20K SERIES

WIRING FOR RH ONLY AND "T" TEMPERATURE OPTION WIRING OR RH AND "TT" TEMPERATURE OPTION



Room, Duct, OSA (RH or RH-T)



Duct and OSA with TT option only

MOUNTING ROOM AND DUCT SENSOR

DIAGRAM 1: The transmitter should be mounted so that the 9" (22.86 cm) probe is in the center of the duct. The transmitter should be duct mounted away from fans, corners, heating and cooling coils, and other equipment that will affect the measurement of relative humidity.

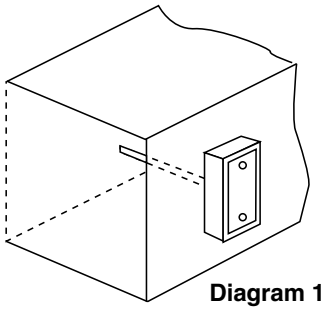


Diagram 1

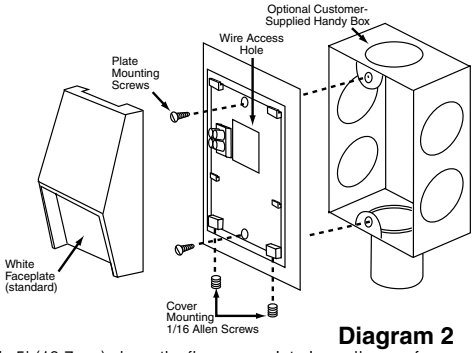
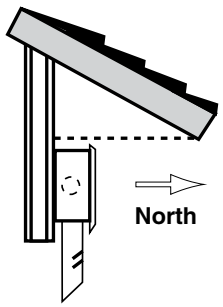


Diagram 2

Diagram 2: The sensor should be mounted approximately 5' (12.7 cm) above the floor, on an interior wall, away from any heating or cooling generating devices. Basic model comes with screw terminal block, two #6-32 screws for handybox mounting, and two #6 x 1" screws for direct wall mounting. Cover screws are #6-32 with a 1/16 allen key head. Precautions should be taken to prevent air infiltration from inside the wall.

MOUNTING OSA SENSOR

The transmitter should be mounted preferably on the north side (Northern Hemisphere) of a building under the eave, not above windows or doors. The transmitter should be mounted vertically with the sensor slots pointing down.



ORDERING INFORMATION

MODEL	DESCRIPTION
HW20K	2% beige room humidity transmitter, 4-20 mA output
HW21K	2% white room humidity transmitter, 4-20 mA output
HD20K	2% duct-mount humidity transmitter, 4-20 mA output
HO20K	2% OSA-mount humidity transmitter, 4-20 mA output
	OPTIONS (Temperature Sensors or Transmitters)
--	No temperature sensor
T3	10,000Ω thermistor @ 77°F (25°C), Type III
T21	2252Ω thermistor @ 77˚F (26˚C), Type II
T22	3000Ω thermistor @ 77˚F (26˚C), Type II
T24	10,000Ω thermistor @ 77°F (25°C), Type II
T27	100,000Ω thermistor @ 77˚F (26˚C), Type II
T42	20,000Ω thermistor @ 77˚F (26˚C), Type IV
T63	1000Ω nickel SS flush mounted plate RTD @ 70˚F (26˚C), Type III (yellow leads)
T71	100Ω SS flush mounted plate RTD @ 32˚F (0˚C), Type III (blue leads)
T81	100Ω RTD @ 32˚F (0˚C), 385 platinum curve
T85	1000Ω 385 platinum RTD
T91	1000Ω 375 platinum RTD
TT-2	-20° to 140°F (-29° to 60°C) transmitter, 4-20 mA (duct and OSA only)
TT-3	0° to 100°F (-18° to 38°C) transmitter, 4-20 mA (duct and OSA only)

HD20K – **T3** ***Example:*** **HD20K-T3** Duct-mount humidity sensor with 10 kΩ Type III temperature sensor

RELATED PRODUCTS

		PAGE
DCPA-1.2	Power supply, 120 VAC IN to 24 VAC/24 VDC OUT	**994**
DCP-1.5-W	Power supply, 24 VAC IN to 24 VDC OUT	**995**

2% ROOM HUMIDITY TRANSMITTER

HS20K SERIES

DESCRIPTION

The **Kele Model HS20K-C** and **HS20K-V Humidity Transmitters** has been specifically designed for use with HVAC/BAS applications and, with its unique low-profile design, is perfect for museums, institutions or other architecturally challenging locations. The HS20K will monitor humidity from 5% to 95% with 2% accuracy with an 4-20 mA analog current output or a 0-5 VDC voltage output. The **HS20K Series** is available with optional passive temperature sensors.

FEATURES

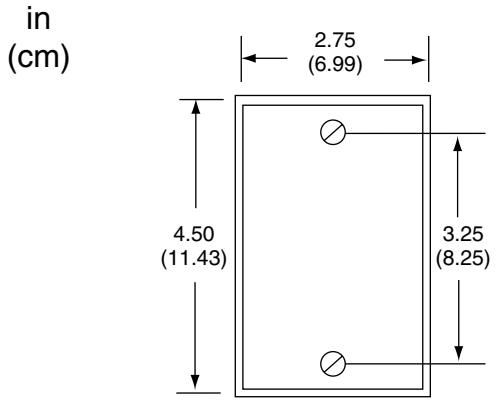
- ***2% accuracy***
- ***4-20mA or 0-5 VDC analog outputs***
- ***Passive temperature sensors output optional***
- ***Stainless steel plate mounted***

HS20K

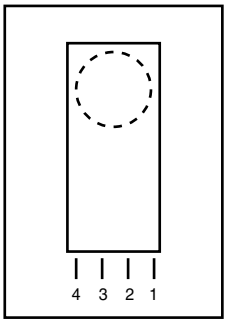
SPECIFICATIONS

Accuracy	2% RH @ 73°F (23°C) from 5% to 90%; (0-5% & 90-100%) add 3%
Thermal Effect	0.05% per °F
Supply Voltage	
HS20K-C	9.5-28VDC
HS20K-V	5 VDC
Signal Output	
HS20K-C	4-20 mA, two wire loop powered, passive thermistor or RTD
HS20K-V	0 to 5 VDC, passive thermistor or RTD
Maximum Output Impedance	725Ω @ 24VDC (Supply voltage – 9.5V) / 0.02
Sensing Technology	Precon HS-2000 capacitive
Operating Humidity	0-100% RH non-condensing
Operating Temperature	-20° to 158°F (-29° to 70°C)
Enclosure	Flush mounted stainless steel plate
Wiring Terminations	Terminal block (22 to 16 AWG)
Weight	0.34 lb (0.15 kg)
Approvals	RoHS
Warranty	18 months

DIMENSIONS



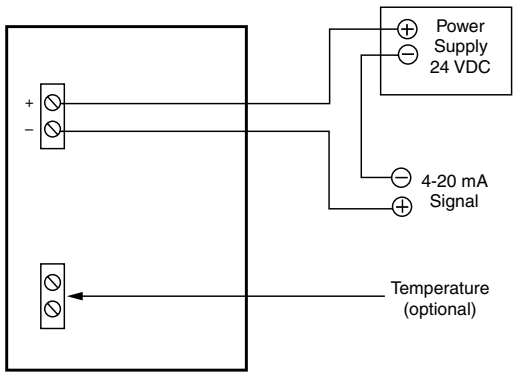
VOLTAGE WIRING



(DCP-524 power supply recommended)

Pin 1 - not used
Pin 2 - Power (5 VDC)
Pin 3 - RH Out (5 VDC)
Pin 4 - Ground

WIRING



HS20K-C 4-20mA Current Output

2% ROOM HUMIDITY TRANSMITTER

HS20K SERIES

ORDERING INFORMATION

MODEL	DESCRIPTION	
HS20K-V	Stainless steel wall plate humidity sensor with 0-5 VDC output	
HS20K-C	Stainless steel wall plate humidity sensor with 4-20 mA output	
	OPTIONS	
	T3	10,000Ω thermistor @ 77˚F (26˚C), Type III (gray leads)
	T21	2252Ω thermistor @ 77˚F (26˚C), Type II (green leads)
	T22	3000Ω thermistor @ 77˚F (26˚C), Type II (blue leads)
	T24	10,000Ω thermistor @ 77˚F (26˚C), Type II (yellow leads)
	T27	100,000Ω thermistor @ 77˚F (26˚C), Type II (gray leads)
	T42	20,000Ω thermistor @ 77˚F (26˚C), Type IV(green leads)
	T63	1000Ω nickel RTD @ 70˚F (26˚C) (yellow leads)
	T71	100Ω RTD @ 32˚F (0˚C) (blue leads)
	T81	100Ω RTD @ 32˚F (0˚C), 385 curve (yellow leads)
	T85	1000Ω RTD @32˚F (0˚C), 385 curve (blue leads)
	T91	1000Ω RTD @ 32˚F (0˚C), 375 curve (green leads)

HS20K-V – **T3**

Example: **HS20K-V-T3** 2% SS wall plate humidity transmitter with 0-5 VDC output with Type III 10,000Ω thermistor

RELATED PRODUCTS		PAGE
DCP-1.5-W-C	Power supply, 24 VAC In to special DC output (Specify output voltage when ordering, 1.5-24 VDC)	**995**
DCP-524	Power supply, 24 VAC IN to 24 VDC and 5 VDC OUT	**997**
DCPA-1.2-C	Power supply, 120 VAC In to 24 VAC/ Special DC output (Specify output voltage when ordering, 1.3-27 VDC)	**994**

2% WALL, DUCT AND OSA HUMIDITY TRANSMITTERS

GEH2 SERIES

DESCRIPTION

The **Amphenol Advanced Sensors Model GEH2 Series 2% Accuracy Humidity Transmitters** are designed specifically for commercial building automation systems (BAS). The room, duct and OSA transmitters use replaceable sensor tips and switch selectable transmission including 4-20mA, 0-5V or 0-10VDC. The **GEH** also has an optional temperature transmitter output with selectable outputs(RH&T must be the same type). All duct and OSA enclosures are rated for IP42 or NEMA 3R applications.

FEATURES

- ***±2% accuracy***
- ***Temperature compensated***
- ***Field-selectable 4-20 mA, 0-10V, or 0-5V outputs***
- ***Replaceable sensor***
- ***Optional temperature transmitter***

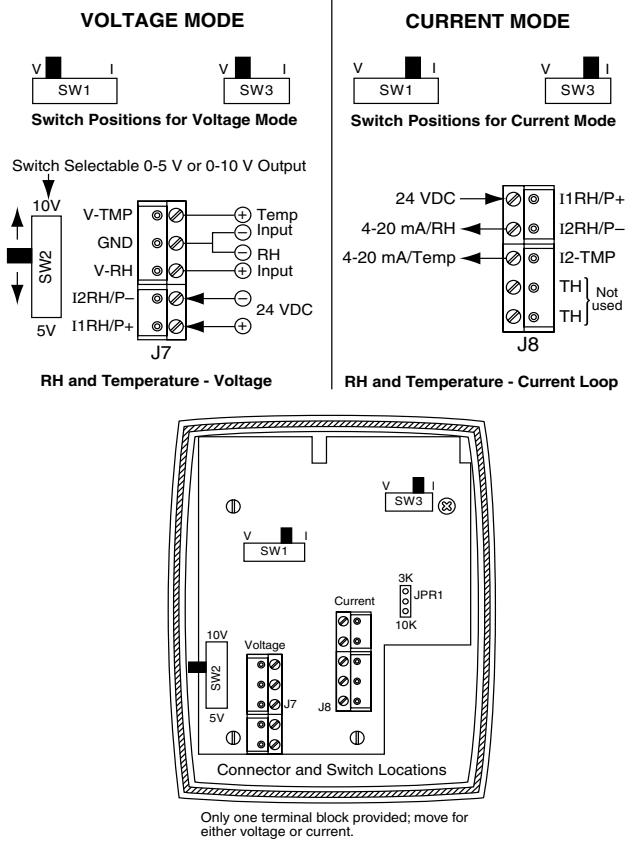
APPLICATIONS

- ***HVAC building controls***
- ***Clean rooms***
- ***Museums / archives***
- ***Hospitals/pharmaceuticals***
- ***Swimming pools***
- ***Animal rooms***

SPECIFICATIONS

Accuracy	2% (10% to 90%)
Supply Voltage	18-30 VDC, 100mA
Signal Output	4-20 mA/0-5V/0-10V selectable; 0-100% RH
Maximum Output Impedance	700Ω maximum @ 24 VDC
Minimum Output Impedance	10 kΩ minimum
Sensing Technology	Capacitive and replaceable
Operating Humidity	0% to 99%, non-condensing
Operating Temperature	-40° to 140°F (-40° to 60°C)
Enclosure Rating	
Room	ABS plastic, UL94V Room Installed IP20, NEMA 1
Duct/OSA	IP42, NEMA 3R Stainless steel with removable tip, PTFE Teflon® shield,
Wiring Terminations	16 to 22 AWG terminals
Weight	
Room	0.34 lb (0.15 Kg)
Duct	0.96 lb (0.44 Kg)
OSA	1.22 lb (0.55 Kg)
Warranty	2 years

WIRING

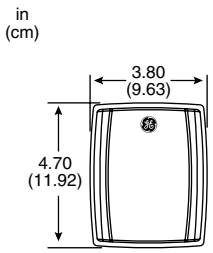


Only one terminal block provided; move for either voltage or current.

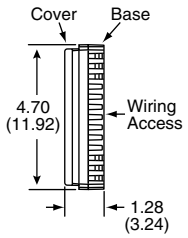
2% WALL, DUCT AND OSA HUMIDITY TRANSMITTERS

GEH2 SERIES

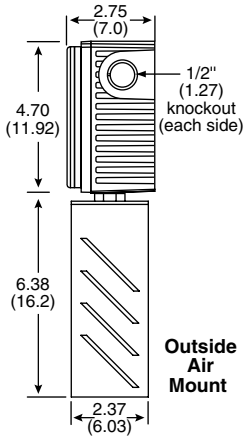
DIMENSIONS



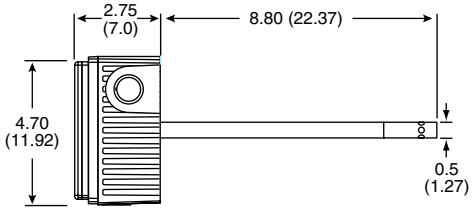
Cover (all mounts)



Space (Wall) Mount



Outside Air Mount



Duct Mount

ORDERING INFORMATION

MODEL	DESCRIPTION	
GEH2	RH transmitter 2% accuracy	
	RH MOUNTING ENCLOSURE	
	S	Decorative room mounting enclosure
	D	Duct mounting with ABS plastic IP42 enclosure
	O	OSA mounting with ABS plastic IP42 enclosure and weather shield
	SN	Decorative room mounting enclosure with NIST certificate
	DN	Duct mounting with ABS plastic IP42 enclosure with NIST certificate
	ON	OSA mounting with ABS plastic IP42 enclosure and weather shield with NIST certificate
	TEMPERATURE OPTION	
	TT0	Transmitter, 40° to 90°F (4.4° to 32.2°C) (**S**, **D**, **SN**, and **DN** only)
	TT2	Transmitter, -20° to 140°F (-29° to 60°C) (**D**, **O**, **DN**, and **ON** only)
	TT3	Transmitter, 0° to 100°F (-18° to 38°C) (All enclosure mounts)

Example: GEH2-SN 2% room RH transmitter with NIST certificate
GEH2-D 2% duct RH transmitter

RELATED PRODUCTS		PAGE
GEH2-RH	Replaceable 25% humidity sensor for room, duct, and OSA	
GEH2-RHTT	Replaceable 2% humidity and temperature sensor for room, duct and OSA transmitters	
DCPA-1.2	Power supply, 120 VAC IN to 24 VAC/24 VDC OUT	**994**
DCP-1.5-W	Power supply, 24 VAC IN to 24 VDC OUT	**995**

2% DUCT AND OSA HUMIDITY TRANSMITTERS

HMD60, HMD70, AND HMK41K

DESCRIPTION

Vaisala's Models HMD60 and **HMD70 Duct Mount Relative Humidity Transmitters** have been specifically designed for use in HVAC/BAS and pharmaceutical applications. These instruments measure relative humidity from 0% to 100%. They are easily installed and meet the European CE standards.

Five-minute field calibration is possible using the **Model HMK41K Humidity Calibrator**. When accuracy adjustment or sensor replacement is necessary, the transmitter can be calibrated in seconds with a single potentiometer without disturbing operation. This saves hours of maintenance time and assures high accuracy.

HMD 60 or HMD 70

FEATURES

- ***Comes with NIST certificate***
- ***Full 0% to 100% RH measurement***
- ***State-of-the-art replaceable sensor technology***

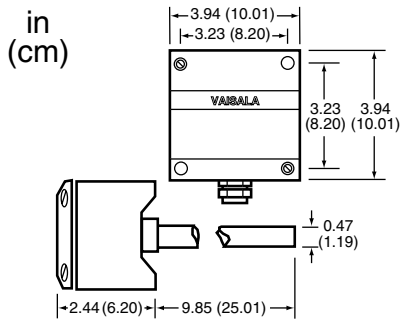
SPECIFICATIONS

HMD60, HMD70	
Accuracy	
Humidity	±2% RH (0% to 90% RH) @68°F (20°C)
Temperature	±0.2°C
Supply Voltage	
60 Series	10 to 35 VDC
70 Series	10 to 35 VDC, 9 to 24 VAC @ 0.3 VA (signal dependant)
Maximum Output Impedance	500Ω @ 24 VDC
Minimum Output Impedance	3000Ω min
Measurement Range	
Humidity	
Duct Mount	0% to 100%
Temperature	
Duct Mount	-4° to 176°F (-20° to 80°C)
Sensing Technology	Capacative and replaceable, Vaisala HUMICAP® 180
Operating Temperature	
Electronics	23° to 131°F (-5° to 55°C)
Sensor Head (Duct)	-4° to 176°F (-20° to 80°C),
Enclosure Rating	Cast aluminum NEMA 4 (IP55), ABS plastic
Wiring Terminations	Screw terminals (20-16 AWG)
Approvals	CE
Weight	
Duct	1.68 lb (0.76 kg)
Warranty	1 year
HM41K	
Sensor	Capacitive and replaceable
Operation	Handheld, onsite calibrator
Reference Probe	
Accuracy	±1% RH (0% to 90% RH) ±2% RH (90% to 100% RH)
Measuring range	0% to 100% RH, -40° to 140°F (-22° to 78°C)
Operating temperature	-40° to 140°F (-40° to 60°C)
Storage temperature	-4° to 140°F (-20° to 60°C)
Temperature coefficient	+0.04% RH/°C typical
Agency approvals	CE, NIST certificate
Weight	2.1 lb (0.95 kg)
Warranty	1 year

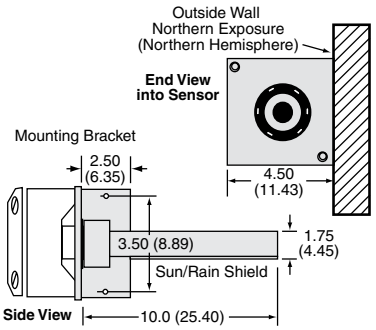
2% DUCT AND OSA HUMIDITY TRANSMITTERS

HMD60, HMD70, AND HMK41K

DIMENSIONS

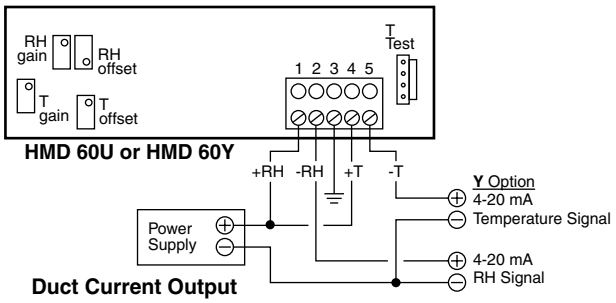


HMD 60/70 Duct RH

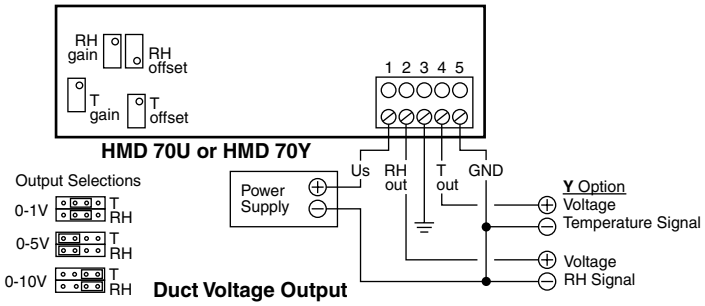


WMK-20 Outside Air Bracket

WIRING



Duct Current Output



Duct Voltage Output

ORDERING INFORMATION

MODEL	DESCRIPTION
HMD60U	Duct RH transmitter, 4-20 mA output
HMD60Y	Duct RH and temperature transmitter, 4-20 mA output
HMD70U	Duct RH transmitter 0-1V, 0-5V, 0-10V output
HMD70Y	Duct RH and temperature transmitter, 0-1V, 0-5V, 0-10V output
HMW60U	Wall mount, RH transmitter, 4-20 mA output
HMW60Y	Wall mount, humidity with 4-20 mA output , temperature with 4-20 mA output
HMW70U	Wall mount, RH transmitter, 0-1 VDC, 0-5 VDC, 0-10 VDC outputs
HMW70Y	Wall mount, humidity, and temperature, 0-1 VDC, 0-5 VDC, 0-10 VDC outputs

	RELATED PRODUCTS	PAGE
HMK41K	2% handheld calibrator with calibration cable	
HUMICAP180	Replacement humidity sensor (replaces 0062HM)	
WMK-20	OSA/Wall-mount bracket	
DCPA-1.2	Power supply, 120 VAC IN to 24 VAC/24 VDC OUT	**994**
DCP-1.5-W	Power supply, 24 VAC IN to 24 VDC OUT	**995**

2% WALL, DUCT AND OSA HUMIDITY TRANSMITTERS

A/RH2 SERIES

DESCRIPTION

The **ACI A/RH2 Series Relative Humidity Transmitters** utilize a capacitive sensing element to deliver a proportional 4 to 20 mA, 0 to 5 VDC, or 0 to 10 VDC output. It is available for room, duct, outside, and stainless steel wall plate applications. The **A/RH2 Series** has on board DIP switches which allow the user to select the desired output signal and can be powered by AC or DC power sources.

Each **A/RH2 Series** humidity transmitter is calibrated using a NIST Traceable Temperature/Humidity Chamber. Three and five point NIST calibration certificates are available and optional.

FEATURES

- ***Popular room housing***
- ***Accuracies of 2%, 3% or 5%***
- ***Three-year warranty***
- ***Duct and OSA twist-off NEMA 4 housing***
- ***24 VDC or 24 VAC power (field-selectable)***
- ***4-20 mA, 0-10V, or 0-5V signal (field-selectable)***
- ***Field calibratable***
- ***Digital display option***
- ***Optional temperature sensor***

SPECIFICATIONS

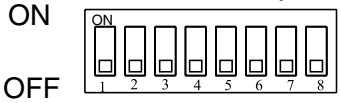
Accuracy	±2% @ 77°F (25°C) from 10% to 95%
Thermal Effect	<0.005% per °F (<0.01 per °C)
Supply Voltage	12-40 VDC or 24 VAC, selectable
Signal Output	4-20 mA, 0-5 VDC, 0-10 VDC (field selectable)
Measurement Range	0% to 100%
Sensing Technology	Capacitive
Operating Temperature	
Room	32° to 122°F (0° to 50°C)
Duct/OSA	-40° to 140°F (-40° to 60°C)
Enclosure	
Room	Plastic Delta-style
Duct/OSA	Plastic weatherproof

Dimensions	
Room	3.8"H x 2.8"W x 0.9"D (9.8 x 7 x 2.3 cm)
Duct	3.6" (9 cm) Ø head with 8.15"L (20 cm) probe 0.75" (1.9 cm) Ø
OSA	3.6" (9 cm) Ø head with 3.0"L (7.6 cm) probe 1.4" (3.6 cm) Ø
Weight	
Room	0.22 lb (0.1 kg)
Duct	1.21 lb (0.54 kg)
OSA	0.6 lb (0.27 kg)
SP	0.2 lb (0.09 kg)
Approvals	CE, RoHS
Warranty	5 years

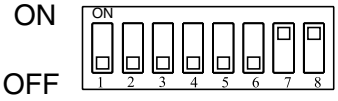
WIRING

Output Selection Switches (SW 1)

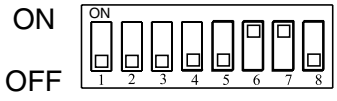
4-20 mA Output



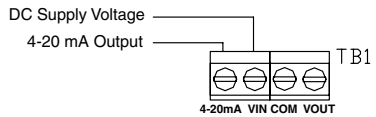
0-10 VDC Output



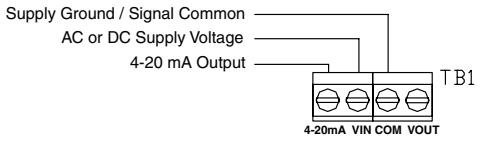
0-5 VDC Output



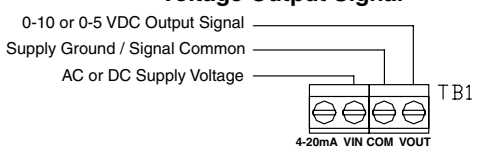
2 Wire Current Output Signal



3 Wire Current Output Signal



Voltage Output Signal



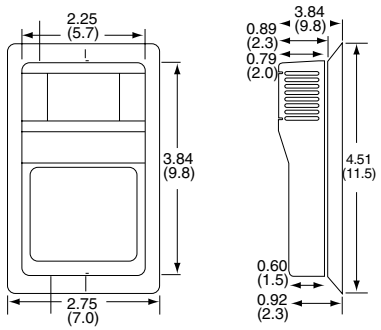
HUMIDITY

2% WALL, DUCT AND OSA HUMIDITY TRANSMITTERS

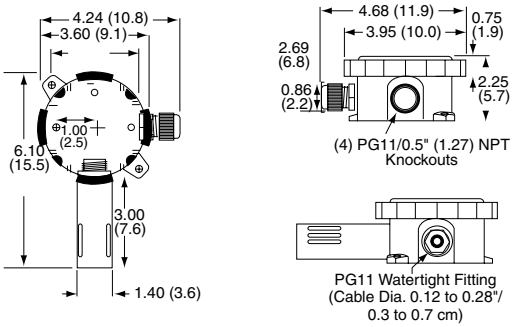
A/RH2 SERIES

DIMENSIONS

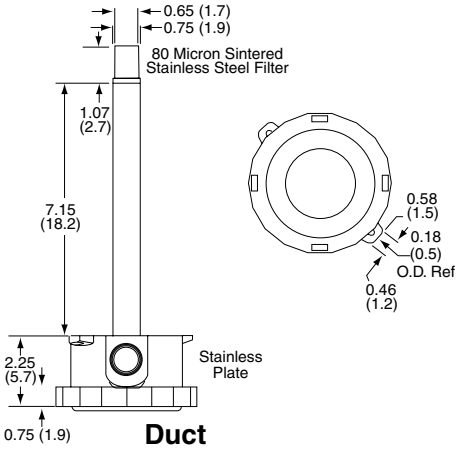
in
(cm)



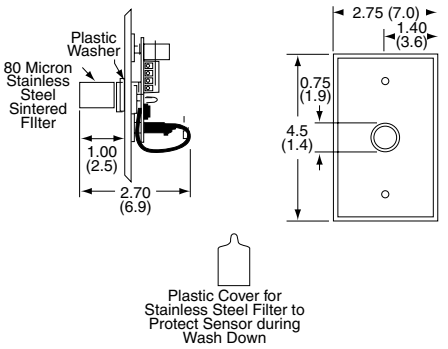
Room



Outside



Duct



Stainless Plate

ORDERING INFORMATION

MODEL	DESCRIPTION	
A/RH2	2% accuracy humidity transmitter	
	AN	Type III 10,000Ω thermistor
	CP	Type II 10,000Ω thermistor
	20K	20,000Ω thermistor
	100	100Ω 385 PT RTD
	1K	1,000Ω 385 PT RTD
	R	Room
	D	Duct
	O	Outside air
	SP	Stainless steel plate passive sensors only

A/RH2 - **100** - **R**

Example: **A/RH2-100-R** A 2% accuracy room humidity transmitter with 100Ω RTD

RELATED PRODUCTS		PAGE
DCP-1.5-W	Power supply, 24 VAC IN to 24 VDC OUT	**995**
DCPA-1.2	Power supply, 120 VAC IN to 24 VAC/24 VDC OUT	**994**
691-K0A	Control transformer, 120:24 VAC, 40 VA, Class 2	**979**

ROOM, DUCT, AND OSA 2% HUMIDITY TRANSMITTERS

HT2D, HT20, HT2S

MINCO

MADE IN USA

DESCRIPTION

The **Minco Model HT relative humidity transmitters** are full-range, high-accuracy building automation transmitters. **Model HT** covers 0% to 100% RH over a wide temperature. The standard two-wire, 4-20 mA output provides low cost space, duct, and outdoor monitoring for building control.

HT2D

HT2O

HT2S

OPERATION

The transmitter converts the relative humidity into a 4-20 mA signal. The **HT** transmitters have a microprocessor that performs the temperature compensation calculations from an onboard RTD. The microprocessor maintains both high accuracy and low cost with a wide humidity and operational temperature span.

An added optional temperature output is available in the same enclosure. It comes with a 4-20 mA signal and a large selection of temperature ranges.

The housings for the duct- and OSA-mount configurations are suitable for outdoor use. The aluminum cast box is gasketed to maintain a rain-tight environment for the transmitter.

FM APPROVED

FEATURES

- ***100% replacement for discontinued Hycal transmitters***
- ***Advanced wall-mount design***
- ***Weather-resistant housing for duct and OSA use***
- ***Dual output option (humidity and temperature)***

SPECIFICATIONS

Accuracy	
Humidity	±2% (5 to 90% RH)
Temperature	±0.5°F (0.27°C)
Supply Voltage	9.4-35 VDC (24V nominal)
Signal Output	4-20 mA
Maximum Output Impedance	(Power supply – 9.4V) / 0.02 = load, i.e., (24V – 9.4V) / 0.02 = 730Ω
Measurement Range	
Humidity	0 to 100% RH
Temperature	
"EN" Range	-20° to 140°F (-29° to 60°C)
"S" Range	-0° to 100°F (-18° to 38°C)
"H" Range	40° to 90°F (4° to 32°C)

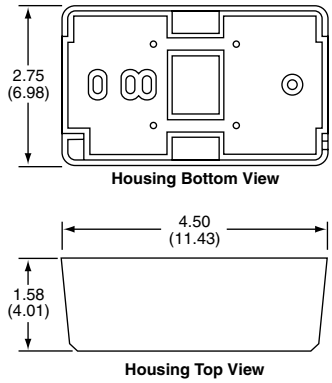
Sensing Technology	
Humidity	Capacitive monolithic IC
Temperature	Platinum 1000Ω RTD 385 curve
Operating Temperature	
Room	-10° to 150°F (-23° to 65°C)
Duct/OSA	-10° to 185°F (-23° to 85°C)
Wiring Terminations	Nonpolar terminals (22-14 AWG wire)
Weight	
Room	0.3 lb (0.13 kg)
Duct	1.1 lb (0.50 kg)
OSA	1.16 lb (0.53 kg)
Warranty	3 years

HUMIDITY

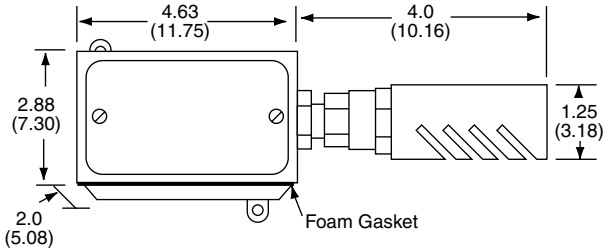
ROOM, DUCT, AND OSA 2% HUMIDITY TRANSMITTERS

HT2D, HT2O, HT2S

DIMENSIONS



HT2S



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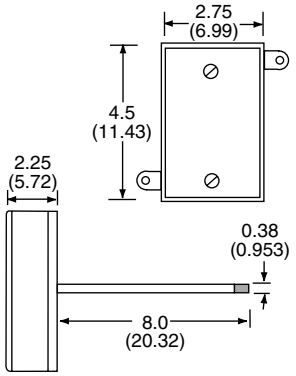
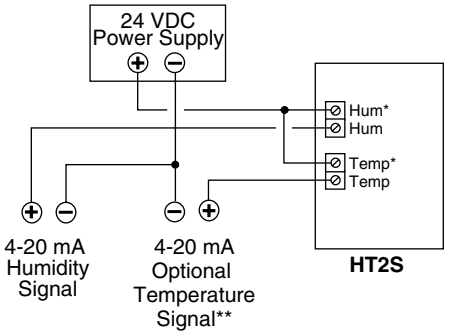


HT2D

WIRING



* Non-polar connection
** Needs humidity connection to output temperature signal properly

ORDERING INFORMATION

ODE	DES	T	ON
HT2	2% relative humidity transmitter		
	D	Duct mount, weather resistant box, 8" probe	
	O	Outside air mounting, weather resistant box with weather shield	
	S	Space room/office mounting	
		1	4-20 mA DC output
		NT	No temperature transmitter
		EN	Range codes per Minco letter ranges (-20°/140°F) or (-29°/60°C)
		S	Range codes per Minco letter ranges (0°/100°F) or (-18°/38°C)
		H	Range codes per Minco letter ranges (40°/90°F) or (4°/32°C)

HT2 **D** **1** **NT**

Example: HT2D1NT 2% RH duct transmitter with 8" probe, no temperature output

RELATED PRODUCTS		PAGE
DCPA-1.2	Power supply, 120 VAC IN to 24 VAC/24 VDC OUT	**994**
DCP-1.5-W	Power supply, 24 VAC IN to 24 VDC OUT	**995**

2% WALL, DUCT AND OSA HUMIDITY TRANSMITTERS

BA/H200 SERIES

DESCRIPTION

The **BAPI BA/H200 Series ±2% Accuracy Humidity Transmitters** from BAPI are designed specifically for HVAC systems. Room sensors are available in the traditional Delta style enclosure or the new BAPI STAT 4. All Duct Units feature medical-grade closed cell foam to seal the probe insertion hole and to absorb vibration. All Outside Air Units have etched Teflon leadwires and are built to withstand high humidity and condensation and perform under real world conditions. Duct and OSA units are available in weatherproof enclosures selectable from IP66 or NEMA 3R. RH transmitter outputs include 4-20 mA, 0-5V, and 0-10V with replaceable sensor tips.

FEATURES

- ***Popular room housing***
- ***2% Accuracy***
- ***Three-year warranty***
- ***Duct and OSA twist-off NEMA 4 housing***
- ***24 VDC or 24 VAC power (field-selectable)***
- ***4-20 mA, 0-10V, or 0-5V signal (field-selectable)***
- ***Field calibratable***
- ***Optional temperature sensor***

Delta-Style Enclosure

BAPIStat 4 Enclosure

BAPIBox 2 Enclosure

NEMA 4 (BB) Duct Unit

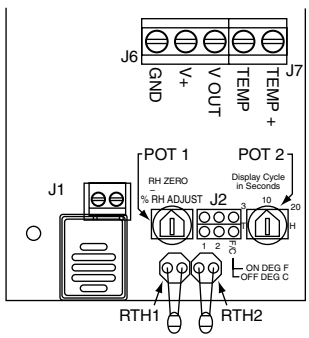
Weatherproof (WP) Duct Unit

SPECIFICATIONS

Accuracy	2% from 20% to 95% RH
Supply Voltage	15-26 VAC/VDC
Signal Output	4-20 mA, 0-5 VDC
Maximum Output Impedance	700Ω maximum @24 VDC
Minimum Output Impedance	10 kΩ minimum
Sensing Technology	Resistive with ceramic substrate
Sensor Protection	
Room	Room Gore-Tex®
Duct/OSA	100 micron stainless steel sintered filter
Operating Humidity	0-100%, non-condensing
Operating Temperature	
Room	32° to 122°F (0° to 50°C)
Duct/OSA	-22° to 158°F (-30° to 70°C)

Enclosure	
Room	BAPI STAT 4: ABS Plastic, UL94V-0
Duct/OSA	
BAPIBox (BB)	IP66, UV resistant polycarbonate
BAPIBox II (BB2)	IP66, UV resistant polycarbonate
WP	Weatherproof, NEMA 3R cast aluminum
Wiring Terminations	Four wire, 16 to 22 AWG terminals
Weight	
Room	0.25 lb (0.11kg)
OSA/Duct	
BB/BB2	1.0 lb (0.45 kg)
WP	1.3 lb (0.59 kg)
Approvals	CE, RoHS
Warranty	2 years

WIRING



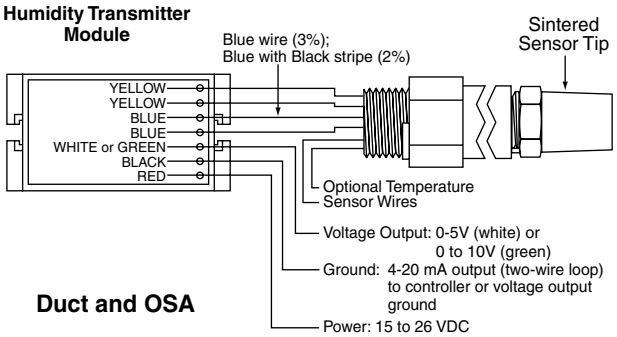
Room Humidity Circuit Board

4 TO 20 mA TERMINATION

Terminal Legend	Function
GND	4 to 20 mA signal (to analog input of controller)
V+	+15 to +26 VDC
TEMP	Optional temperature sensor
TEMP	Optional temperature sensor

0 TO 5 VDC TERMINATION

Terminal Legend	Function
GND	To controller ground (GND or common)
V+	+15 to +26 VAC/VDC
V OUT	0 to 5 VDC or 0 to 10V signal (to analog input of controller)
TEMP	Optional temperature sensor
TEMP	Optional temperature sensor



Duct and OSA

BAPI ROOM DUCT, AND OSA HUMIDITY TRANSMITTERS

BA/H200 SERIES

ORDERING INFORMATION

BAPI ROOM HUMIDITY TRANSMITTER		
MODEL	**DESCRIPTION**	
BA/H200R	2% Humidity Transmitter, 4-20 mA output, Delta enclosure	
BA/H210R	2% Humidity Transmitter, 0-10 VDC output, Delta Enclosure	
BA/H220B4XZCG	2% Humidity Transmitter, 4-20 mA output, BAPI STAT 4	
BA/H205B4XZCG	2% Humidity Transmitter, 0-5 VDC output, BAPI STAT 4	
BA/H210B4XZCG	2% Humidity Transmitter, 0-10 VDC output, BAPI STAT 4	
BA/H212B4XZCG	2% Humidity Transmitter, 2-10 VDC output, BAPI STAT 4	
	DISPLAY OPTION (optional)	
	D	LCD Display
	F	Delta (BAPI STAT 4)

Example: **BA/H220B4XZCGDF** 2% Room humidity transmitter, 4-20 mA output, BAPI STAT 4 with LCD display

BAPI DUCT HUMIDITY SENSOR		
MODEL	**DESCRIPTION**	
BA/H200	2% Humidity w/ Interchangeable Output of 0-5 VDC or 4-20 mA output	
BA/H210	2% Humidity, 0-10 VDC output	
BA/H212	2% Humidity, 2-10 VDC output	
	ENCLOSURE OPTION (Must choose one)	
	DBB	BapiBox Enclosure, IP66 Rated, UV Resistant Polycarbonate
	DBB2	BapiBox2 Enclosure, IP66 Rated, UV Resistant Polycarbonate
	DWP	Weatherproof Enclosure, NEMA 3R Rated Metal Enclosure

Example: **BA/H200DBB2** 2% Duct mount humidity transmitter, 4-20 mA output, BB2 enclosure

BAPI OSA HUMIDITY SENSOR		
MODEL	**DESCRIPTION**	
BA/H200	2% Humidity w/ Interchangeable Output of 0-5 VDC or 4-20 mA output	
BA/H210	2% Humidity, 0-10 VDC output	
BA/H212	2% Humidity, 2-10 VDC output	
	ENCLOSURE OPTION (Must choose one)	
	OBB	BapiBox Enclosure, IP66 Rated, UV Resistant Polycarbonate
	OBB2	BapiBox2 Enclosure, IP66 Rated, UV Resistant Polycarbonate
	OWP	Weatherproof Enclosure, NEMA 3R Rated Metal Enclosure

Example: **BA/H200OWP** 2% OSA mount humidity transmitter, 4-20 mA output, weather proof housing

RELATED PRODUCTS		PAGE
BA/ADP-525-7-CPW	Copla white 7" x 5.25" adaptor plate	**1391**
BA/ADP-525-7-OFW	Off white 7" x 5.25" adaptor plate	**1391**
BA/ADP-525-7-WMW	Warm white 7" x 5.25" adaptor plate	**1391**
BA/FOAMBACK	White foam back insulator	**1391**
DCP-1.5-W	Power supply, 24 VAC IN to 24 VDC OUT	**995**
DCPA-1.2	Power supply, 120 VAC In to 24 VAC/24 VDC Out	**994**
UR	Moisture-resistant three-wire butt splice	

ROOM, DUCT, AND OSA 2% HUMIDITY TRANSMITTERS

SRH12 SERIES

DESCRIPTION

Designed for the HVAC control system, the **Setra SRH12 Series** of humidity transmitters offer reliable measurement of RH levels from 0 to 100% with an accuracy of 2%. Available in wall, duct, and outside air configurations, the **SRH12 Series** is easy to install and service if necessary. The transmitters utilize a field replaceable sensor tip that allows the end user to replace sensors on-site. This eliminates factory calibration and downtime.

FEATURES

- ***±2% RH accuracy***
- ***No recalibration required***
- ***Replaceable sensor***
- ***Capacitive sensor technology***
- ***Reverse polarity protection***

APPLICATION

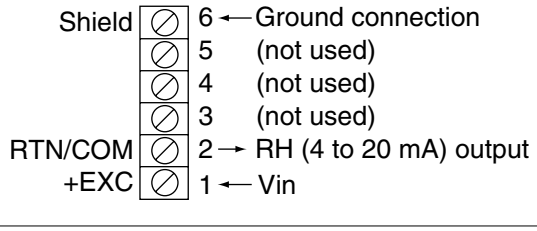
- ***HVAC/R building controls***
- ***Indoor air quality***
- ***Laboratories***
- ***Antiquities preservation***
- ***Swimming pools***
- ***Clean rooms***

Outside Air

Duct

Wall

WIRING



SPECIFICATIONS

Accuracy	2% RH (0-100% RH) @ 73°F (23°C)
Drift	<1% RH/yr @ 73°F (23°C), 50% RH
Supply Voltage	12-30 VDC
Signal Output	4-20 mA, 2-wire
Maximum Output Impedance	700Ω @ 24 VDC Ω = (supply - 10) / 0.02
Sensing Technology	Replaceable capacitive
Sensor Protection	Porous Polyethylene
Protection	Reverse polarity protection
Operating Humidity	0 to100%
Operating Temperature	-40° to 140°F (-40° to 60°C)
Enclosure	
Room	ABS plastic (flammability, 94V-0)
Duct	Polycarbonate (flammability, 94V-0), NEMA 4 (IP65),
Wiring Terminations	Pluggable terminal block

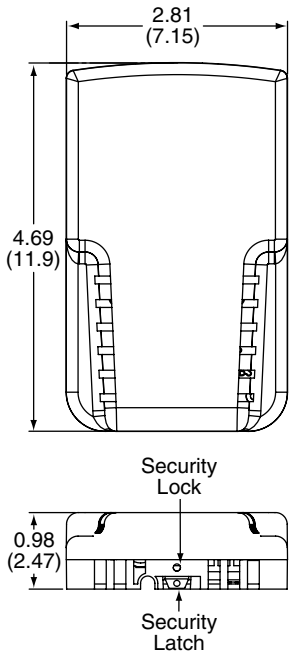
Dimensions	
Room	4.7"H x 2.8"W x 1.0"D (12 x 7 x 2.5 cm)
Duct	5.1"L x 2.7"W x 2.4"D (13 x 6.8 x 7 cm) 8.5" (21.6 cm) probe length 1/2" probe Ø
OSA	6.1"L x 4"W x 12.5"D (15.5 x 10 x 32 cm)
Approvals	CE, RoHS
Weight	
Room	0.5 lb (0.23 kg)
Duct	1.3 lb (0.59 kg)
OSA	2.6 lb (1.2 kg)
Warranty	1 year (sensor) 3 years (electronics only)

HUMIDITY

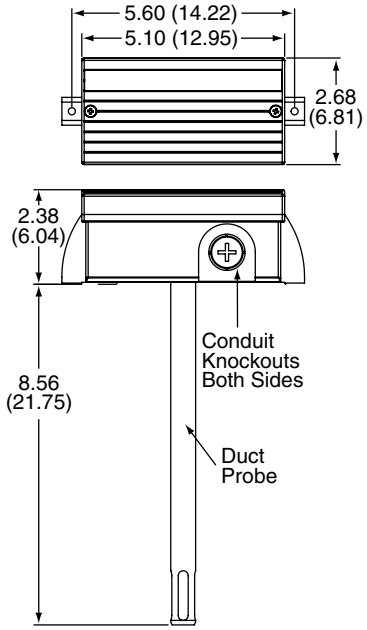
ROOM, DUCT, AND OSA 2% HUMIDITY TRANSMITTERS

SRH12 SERIES

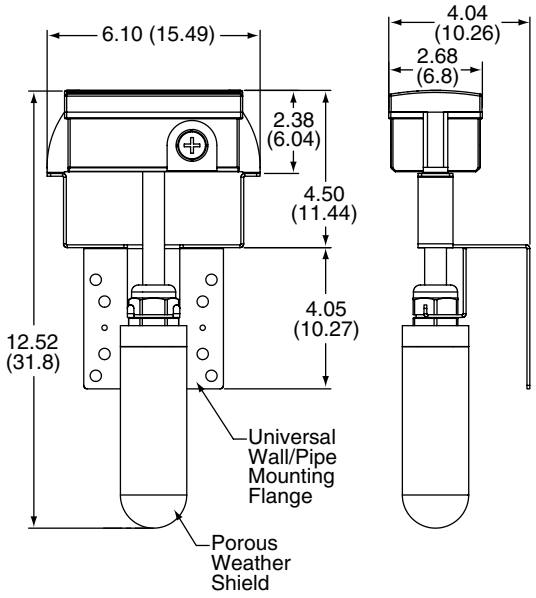
DIMENSIONS



Wall Mount



Duct Mount



Outside Air

ORDERING INFORMATION

MODEL	DESCRIPTION
SRH2PO11T0N	2% Outside air humidity transmitter, 4-20 mA output
SRH12PD11T0N	2% Duct mount humidity transmitter, 4-20 mA output
SRH12PW11T0N	2% Wall mount humidity transmitter, 4-20 mA output

	RELATED PRODUCTS	PAGE
DCPA-1.2	Power supply, 120 VAC IN to 24 VAC/24 VDC OUT	**994**
DCP-1.5-W	Power supply, 24 VAC IN to 24 VDC OUT	**995**

	ACCESSORIES
SRH32PT0	Replacement 2% humidity sensor

2% WATERPROOF / WASHDOWN HUMIDITY TRANSMITTER

EHRH

DESCRIPTION

The **Amphenol Advance Systems EHRH Series Humidity Transmitters** are specifically designed for washdown areas and condensing atmospheres and offer thermistor or 4-20 mA temperature output. The **EHRH Series** measures relative humidity with a 2% resistive sensor and can withstand 100% saturation. It is made to be surface mounted to a single-gang outlet box or mounted directly to the wall. The **EHRH Series** are furnished with a waterproof case, connector, and stainless steel cover with leads for termination inside the wall.

Amphenol
Advanced Sensors

FEATURES

- ***Wash down waterproof design***
- ***4-20 mA output***
- ***Easy one-point field calibration***
- ***Rugged metal cover***
- ***Temperature output: thermistor or 4-20 mA***

APPLICATION

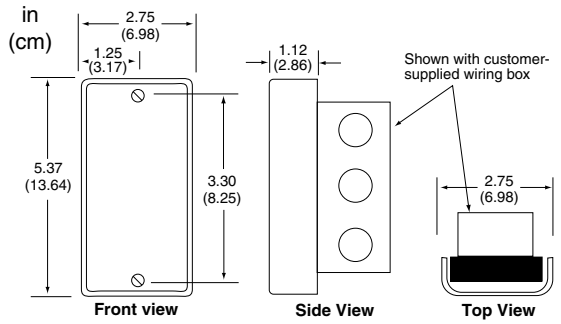
- ***Swimming pools***
- ***Green houses***
- ***Hospital suites***
- ***Food processing***
- ***Gymnasium***

SPECIFICATIONS

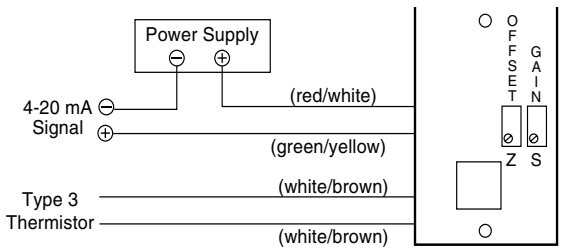
Accuracy	
Humidity	2% (30% to 95%)
Temperature (EHRHT)	±0.5°F (±0.3°C)
Supply Voltage	24 VDC ±20% (loop powered)
Signal Output	4-20 mA
Maximum Output Impedance	700Ω @ 24 VDC
Measurement Range	
Humidity	0% to 100%
Temperature	-20° to 140°F (-29° to 60°C)
Sensing Technology	
Humidity	Bulk polymer resistive
Temperature	Platinum 1000Ω 385 RTD (EHRHT) Type III 10 kΩ

Adjustments	
Zero	±20%
Span	±10%
Sensitivity	0.1% RH
Operating Temperature	-4° to 129°F (-20° to 54°C)
Enclosure Rating	Epoxy-hardened waterproof case Cover: Stainless steel
Wiring Terminations	Flying leads
Weight	0.98 lb (0.44 kg)
Warranty	1 year

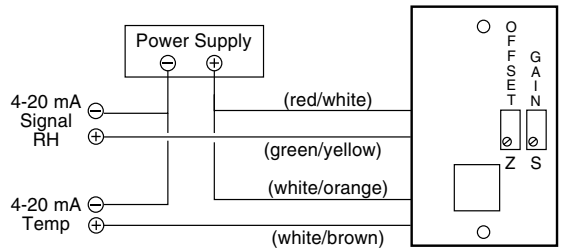
DIMENSIONS



WIRING



EHRH



EHRHT

ORDERING INFORMATION

MODEL	DESCRIPTION
EHRH	Waterproof/Washdown 2% RH transmitter
EHRHT	Waterproof/Washdown 2% RH temperature transmitter

RELATED PRODUCTS		PAGE
DCPA-1.2	Power supply, 120 VAC IN to 24 VAC/24 VDC OUT	**994**
DCP-1.5-W	Power supply, 24 VAC IN to 24 VDC OUT	**995**

HUMIDITY

ROOM, DUCT, AND OSA 3% HUMIDITY TRANSMITTERS

KH3 SERIES

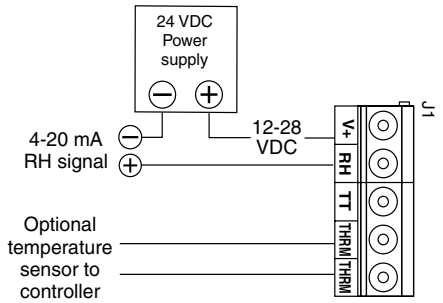
DESCRIPTION

The **Kele Model KHR, KHD, and KHO Humidity Transmitters** are specifically designed for use in HVAC/BAS applications. These instruments measure relative humidity from 0% to 100%. The standard two-wire, 4-20 mA output provides low cost humidity monitoring for building control. The RH transmitter is available with thermistor or RTD temperature sensors or a 4-20 mA rangeable temperature transmitter. They are available in room, duct, and OSA mounting styles.

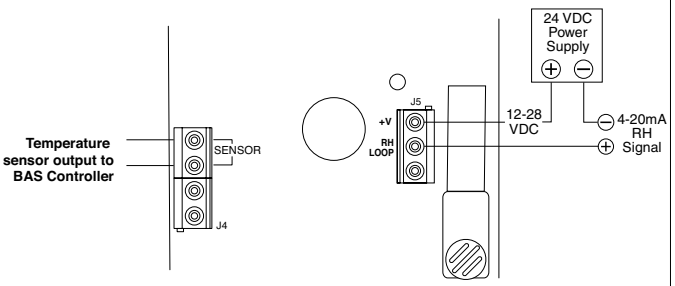
FEATURES

- ***Packaged for Price and Performance***
- ***Calibration free Interchangeable sensors***
- ***Twelve point computerized calibration***
- ***0% to 100% RH measurement***
- ***±3% accuracy (5% to 95% RH)***
- ***Temperature compensated***
- ***No need to remove mounting box to replace sensor***
- ***Attractive new room enclosure design***
- ***Two-wire, 4-20 mA output***
- ***Custom Logo's***
- ***Optional push button, LED and comm. jack***
- ***Optional temperature sensor (Thermistor or RTD)***

WIRING - KHD AND KHR



WIRING - KHR



SPECIFICATIONS

Accuracy	3% RH @ 73°F from 5% to 90% RH; (0%-5% & 90%-100%) add 4%
Drift	<±0.5% per year
Thermal Effect	0.05% per °F
Supply Voltage	9.5-28VDC
Signal Output	4-20 mA two-wire, loop-powered
Maximum Output Impedance mA	725Ω @ 24 VDC (Supply voltage - 9.5 VDC) / 0.02
Sensing Technology	Precon HS-2000 capacitive
Operating Humidity	0-100% non-condensing
Operating Temperature	-20° to 158°F (-29° to 70°C)
Enclosure	
KHR	White plastic, UL94HB
KHD	Metal handy box
KHO	NEMA 3R plastic box
Probe	
KHR	1/2" aluminum tube with expanded Teflon® filter
KHD	1/2" aluminum tube with 40 micron stainless steel sintered filter
Wiring Terminations	Screw terminals
Weight	
KHR	0.2 lb (0.09 kg)
KHD	1.2 lb (0.54 kg)
KHO	0.52 lb (0.24 kg)
Approvals	RoHS
Warranty	18 months

ROOM, DUCT, AND OSA 3% HUMIDITY TRANSMITTERS

KH3 SERIES

ORDERING INFORMATION

MODEL	DESCRIPTION
KHD3	Duct mounted 3% humidity transmitter
KHO3	Outside air 3% humidity transmitter
KHR3	Wall mounted room/space 3% humidity transmitter
	Optional temperature ranges
T3	10,000Ω thermistor @ 77°F (26°C), Type III
T21	2252Ω thermistor @ 77°F (26°C), Type II
T22	3000Ω thermistor @ 77°F (26°C), Type II
T24	10,000Ω thermistor @ 77°F (26°C), Type II
T27	100,000Ω thermistor @ 77°F (26°C), Type II
T42	20,000Ω thermistor @ 77°F (26°C), Type IV
T81	100Ω RTD @ 32°F (0°C), 385 platinum curve
T85	1000Ω RTD @32°F (0°C), 385 platinum curve
T91	1000Ω RTD @ 32°F (0°C), 375 platinum curve
	OPTIONS
CL1	Custom one color logo, KHR3 only
WP	Weatherproof housing, KHD3 only
XJ1	RJ11 externally-accessible communication jack (CCRJ11AD required), KHR3 only
XJ2	Internal RJ11 communication jack, KHR3 only
XLED	LED indicator lamp 24 VAC/VDC green, KHR3 only
XMB	Momentary pushbutton switch, jumpered across sensor or pot (JP1), KHR3 only
XN1	NIST certificate, one reference point 32°F (0°C)
XN2	NIST certificate, two reference points 32°F/158°F (0°C/70°C)
XN3	NIST certificate, three reference points 32°F/77°F/158°F (0°C/25°C/70°C)

KHD3 — **T3** — **WP**

Example: **KHD3-T3-WP** Duct mounted 3% humidity transmitter with 10,000Ω thermistor @ 77°F (26°C), Type III and weatherproof housing

RELATED PRODUCTS		PAGE
DCP-1.5-W	Power supply, 24 VAC IN to 24 VDC OUT	**995**
DCPA-1.2	Power supply, 120 VAC IN to 24 VAC/24 VDC OUT	**994**
HSD3	Replaceable 3% humidity sensor for KHD3	
HSO3	Replaceable 3% humidity sensor for KHO3	
HSR3	Replaceable 3% humidity sensor for KHR3	

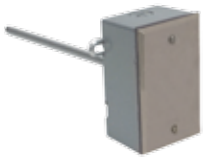
3% WALL, DUCT AND OSA HUMIDITY TRANSMITTERS

H_30K SERIES

DESCRIPTION

The **Kele Series H_30K Humidity Transmitters** have been specifically designed for use with HVAC/BAS applications. These instruments measure relative humidity from 5 to 90% with 3% accuracy and produce a two wire, 4-20mA linear output. All can come equipped with an optional passive RTD or thermistor. The duct and OSA versions may also be fitted with a 4-20mA temperature transmitter.

HW30K



HD30K

HO30K

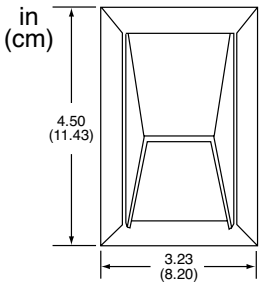
OPERATION

The temperature compensated circuitry converts the relative humidity into a 4-20 mA signal. The optional temperature sensors, RTDs or thermistors, offer direct connection to most automation systems. On duct and OSA units, an optional 4-20 mA temperature transmitter may also be employed and is rangeable from -30° to 250°F (-34° to 121°C).

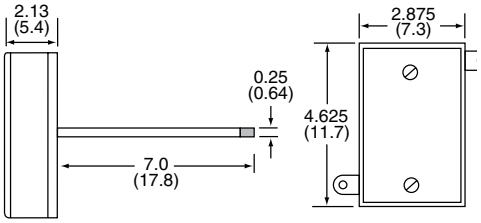
FEATURES

- ***3% accuracy (5% to 90%)***
- ***Two wire, 4-20mA RH output***
- ***Optional temperature thermistor***
- ***Optional temperature RTD***
- ***Optional temperature 4-20mA (Duct or OSA)***

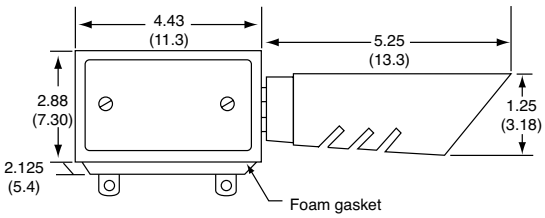
DIMENSIONS



HW30K



HD30K



HO30K

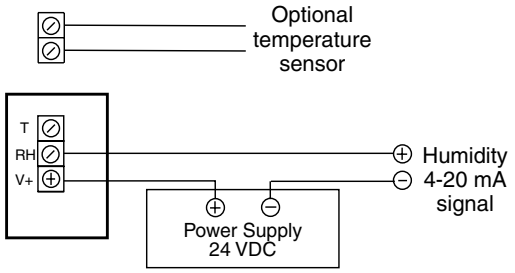
SPECIFICATIONS

Accuracy	3% RH @ 73°F (23°C) from 5% to 90%; (0-5% & 90%-100%) add 4%
Stability	typically <0.5% drift per year
Thermal Effect	0.05% per °F
Supply Voltage	9.5-28 VDC
Signal Output	RH: 4-20 mA Temperature: 4-20 mA, optional thermistor, RTD
Maximum Output Impedance	725 @ 24VDC (Supply voltage - 9.5V) / 0.02)
Measurement Range	
RH	0-100%
Temperature	-20° to 140°F (-29° to 60°C) (see ordering information)
Sensor Protection	Sintered filter (duct and OSA)
Operating Humidity	0-100% RH non-condensing
Operating Temperature	-20° to 158°F (-29° to 70°C)
Enclosure	Beige plastic (room), weather resistant cast aluminum (duct and OSA)
Wiring Terminations	Terminal block (22 to 16 AWG)
Weight	
Wall	0.3 lb (0.09 kg)
Duct	1.14 lb (0.52 kg)
OSA	1.2 lb (0.54 kg)
Approvals	RoHs
Warranty	18 months

3% WALL, DUCT AND OSA HUMIDITY TRANSMITTERS

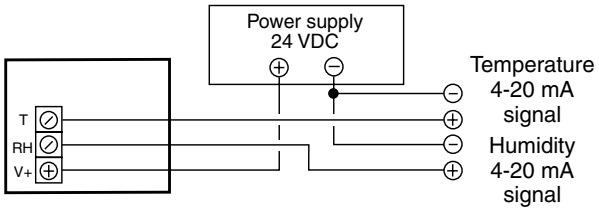
H_30K SERIES

WIRING FOR RH ONLY AND "T" TEMPERATURE OPTION



Room, Duct, OSA (RH or RH-T)

WIRING FOR RH AND "TT" TEMPERATURE OPTION



Duct and OSA with TT option only

MOUNTING ROOM SENSOR

DIAGRAM 1: The transmitter should be mounted so that the 9" (22.86 cm) probe is in the center of the duct. The transmitter should be duct mounted away from fans, corners, heating and cooling coils, and other equipment that will affect the measurement of relative humidity.

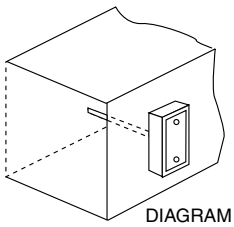


DIAGRAM 1

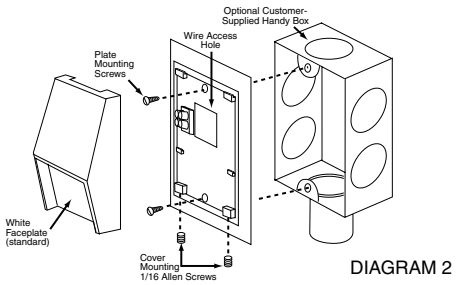
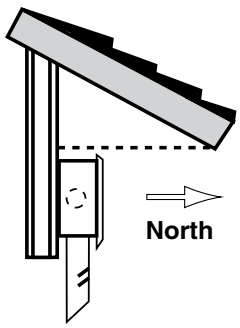


DIAGRAM 2

DIAGRAM 2: The sensor should be mounted approximately 5' (12.7 cm) above the floor, on an interior wall, away from any heating or cooling generating devices. Basic model comes with screw terminal block, two #6-32 screws for handybox mounting, and two #6 x 1" screws for direct wall mounting. Cover screws are #6-32 with a 1/16 allen key head. Precautions should be taken to prevent air infiltration from inside the wall.

MOUNTING OSA SENSOR

The transmitter should be mounted preferably on the north side (Northern Hemisphere) of a building under the eave, not above windows or doors. The transmitter should be mounted vertically with the sensor slots pointing down.



ORDERING INFORMATION

MODEL	DESCRIPTION
HW30K	3% beige room humidity transmitter, 4-20 mA output
HD30K	3% duct-mount humidity transmitter, 4-20 mA output
HO30K	3% OSA-mount humidity transmitter, 4-20 mA output
	OPTIONS (Temperature Sensors or Transmitters)
--	No temperature sensor
T3	10,000Ω thermistor @ 77°F (25°C), Type III
T21	2252Ω thermistor @ 77˚F (26˚C), Type II
T22	3000Ω thermistor @ 77˚F (26˚C), Type II
T24	10,000Ω thermistor @ 77°F (25°C), Type II
T27	100,000Ω thermistor @ 77˚F (26˚C), Type II
T42	20,000Ω thermistor @ 77˚F (26˚C), Type IV
T63	1000Ω nickel SS flush mounted plate RTD @ 70˚F (26˚C), Type III (yellow leads)
T81	100Ω RTD @ 32˚F (0˚C), 385 platinum curve
T85	1000Ω 385 platinum RTD
T91	1000Ω 375 platinum RTD
TT-2	-20° to 140°F (-29° to 60°C) transmitter, 4-20 mA (duct and OSA only)
TT-3	0° to 100°F (-18° to 38°C) transmitter, 4-20 mA (duct and OSA only)
XN1	NIST 1 point, 30% (Humidity only)
XN2	NIST 2 point, 30% and 50% (Humidity only)
XN3	NIST 3 point, 30%, 50% and 70% (Humidity only)

HD30K – T3

Example: **HD30K-T3** Duct-mount humidity sensor with 10 kΩ Type III temperature sensor

RELATED PRODUCTS		PAGE
DCPA-1.2	Power supply, 120 VAC IN to 24 VAC/24 VDC OUT	**994**
DCP-1.5-W	Power supply, 24 VAC IN to 24 VDC OUT	**995**

HUMIDITY

3% HUMIDITY TRANSMITTER & OPTIONAL TEMPERATURE TRANSMITTERS

HD31K, HO31K, HW31K

DESCRIPTION

The **Kele Models HW31K, HD31K, and HO31K 3% Humidity Transmitters** are specifically designed for use in HVAC/BAS applications. These instruments measure relative humidity from 0% to 100%. The standard twowire, 4-20 mA output provides low-cost humidity monitoring for building control. The RH transmitters are available with thermistor or RTD temperature sensors or a 4-20 mA rangeable temperature transmitter. They are available in room, duct, and OSA mounting styles.

OPERATION

The transmitter converts the relative humidity into a 4-20 mA signal with 3% accuracy. The optional temperature sensors, thermistor or RTD, offer direct connections to most automation systems. The optional rangeable temperature transmitter offers a 4-20 mA signal and is rangeable from -30° to 250°F (-34° to 121°C).

HW31K

HD31K

HO31K

FEATURES

- ***0% to 100% RH measurement***
- ***3% accuracy (5% to 90% RH)***
- ***Two-wire, 4-20 mA output***
- ***White plastic design***

OPTIONS:

- ***Temperature thermistor***
- ***Temperature RTD***
- ***Temperature 4-20 mA for duct and OSA***

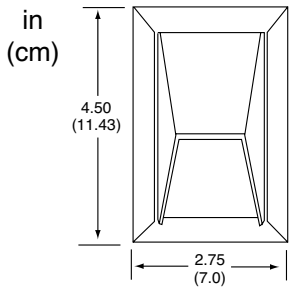
SPECIFICATIONS

Accuracy	3% RH @ 73°F (23°C) from 5% to 90%; (0-5% & 90%-100%) add 4%
Thermal Effect	0.05% per °F
Stability	typically <±1% drift per year
Supply Voltage	9.5-28 VDC
Signal Output	RH: 4-20 mA Temperature: 4-20 mA optional thermistor, RTD
Maximum Output Impedance	725Ω @ 24VDC (Supply voltage - 9.5V) / 0.02)
Measurement Range	
RH	0-100%
Temperature	-20° to 140°F (29° to 60°C) (see ordering information)
Sensor Protection	Sintered filter (duct and OSA)
Operating Humidity	0-100% RH non-condensing
Operating Temperature	-20° to 158°F (-29° to 70°C)
Enclosure Rating	White plastic
Wiring Terminations	Screw terminals for loop termination
Weight	
Room	0.3 lb (0.09 Kg)
Duct	0.58 lb (0.26 Kg)
OSA	0.72 lb (0.33 Kg)
Approvals	RoHs
Warranty	18 months

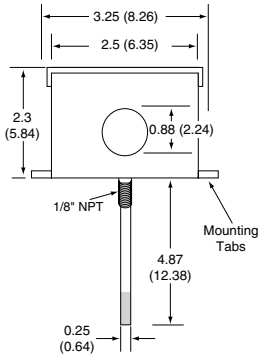
3% HUMIDITY TRANSMITTER & OPTIONAL TEMPERATURE TRANSMITTERS

HD31K, HO31K, HW31K

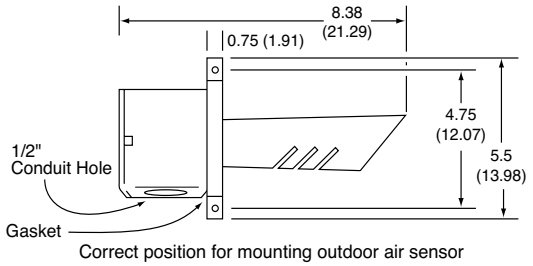
DIMENSIONS



HW31K

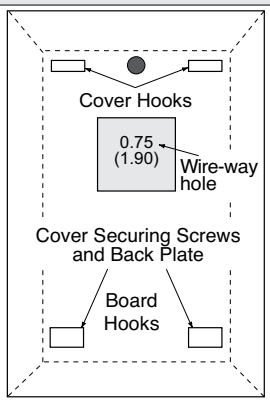


HD31K

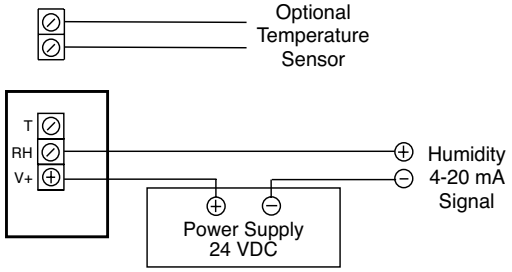


HO31K

MOUNTING



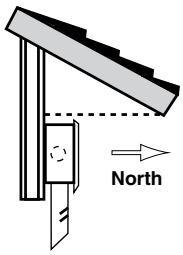
WIRING FOR ROOM UNIT



Room, HW31K (RH or RH-T)

MOUNTING OSA SENSOR

The transmitter should be mounted preferably on the north side (Northern Hemisphere) of a building under the eave, not above windows or doors. The transmitter should be mounted vertically with the sensor slots pointing down.



ORDERING INFORMATION

MODEL	DESCRIPTION	
HW31K	3% room-mount humidity transmitter, 4-20 mA output	
HD31K	3% duct-mount humidity transmitter, 4-20 mA output	
HO31K	3% OSA-mount humidity transmitter, 4-20 mA output	
	OPTIONS (temperature sensor or transmitter)	
	--	No temperature sensor
	T3	10,000Ω thermistor @ 77°F (25°C), Type III
	T21	2252Ω thermistor @ 77˚F (26˚C), Type II
	T22	3000Ω thermistor @ 77˚F (26˚C), Type II
	T24	10,000Ω thermistor @ 77°F (25°C), Type II
	T27	100,000Ω thermistor @ 77˚F (26˚C), Type II
	T42	20,000Ω thermistor @ 77˚F (26˚C), Type IV
	T63	1000Ω nickel RTD @ 70˚F (26˚C), Type III
	T81	100Ω RTD @ 32˚F (0˚C), 385 platinum curve
	T85	1000Ω @ 32˚F (0˚C), 385 platinum RTD
	T91	1000Ω @ 32˚F (0˚C), 375 platinum RTD

HD31K – **T3**

Example: **HD31K-T3** Duct-mount humidity transmitter with 10 kΩ Type III temperature sensor

RELATED PRODUCTS		PAGE
DCPA-1.2	Power supply, 120 VAC IN to 24 VAC/24 VDC OUT	**994**
DCP-1.5-W	Power supply, 24 VAC IN to 24 VDC OUT	**995**

3% ROOM HUMIDITY AND TEMPERATURE TRANSMITTER

HMW80 SERIES

DESCRIPTION

The **Vaisala HMW80 Series Room Humidity and Temperature Transmitte**r features the interchangeable INTERCAP® sensor and is designed for use in energy management systems in buildings. They combine excellent stability with reliable operation. The **HMW80 Series** is easy to install, requires no recalibration if the sensor is changed and is insensitive to dust as well as to most chemicals.. This means great savings in overall maintenance costs.

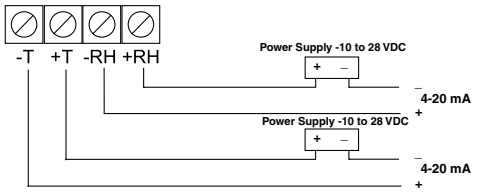
The **HMW80 Series** transmitters are available in four models: **HMW82** and **HMW83** transmitters measure both humidity and temperature. The **TMW82** and **TMW83** measure temperature only. **HMW80** Series is available in both 2- and 3-wire and 4-20 mA and voltage analog signals.

FEATURES

- ***3% accuracy***
- ***Easy to replace interchangeable humidity sensor***
- ***Two-year warranty***
- ***No recalibration required***
- ***Low maintenance costs***
- ***Temperature and humidity outputs***
- ***2-wire or 3-wire models***

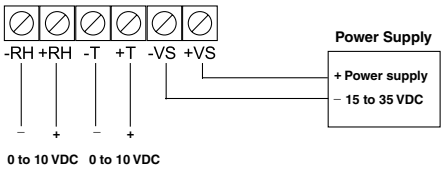
WIRING

HMW82



You must connect the RH channel of the HMW82, even if you only want to measure temperature. Connecting the temperature channel is optional.

HMW83



SPECIFICATIONS

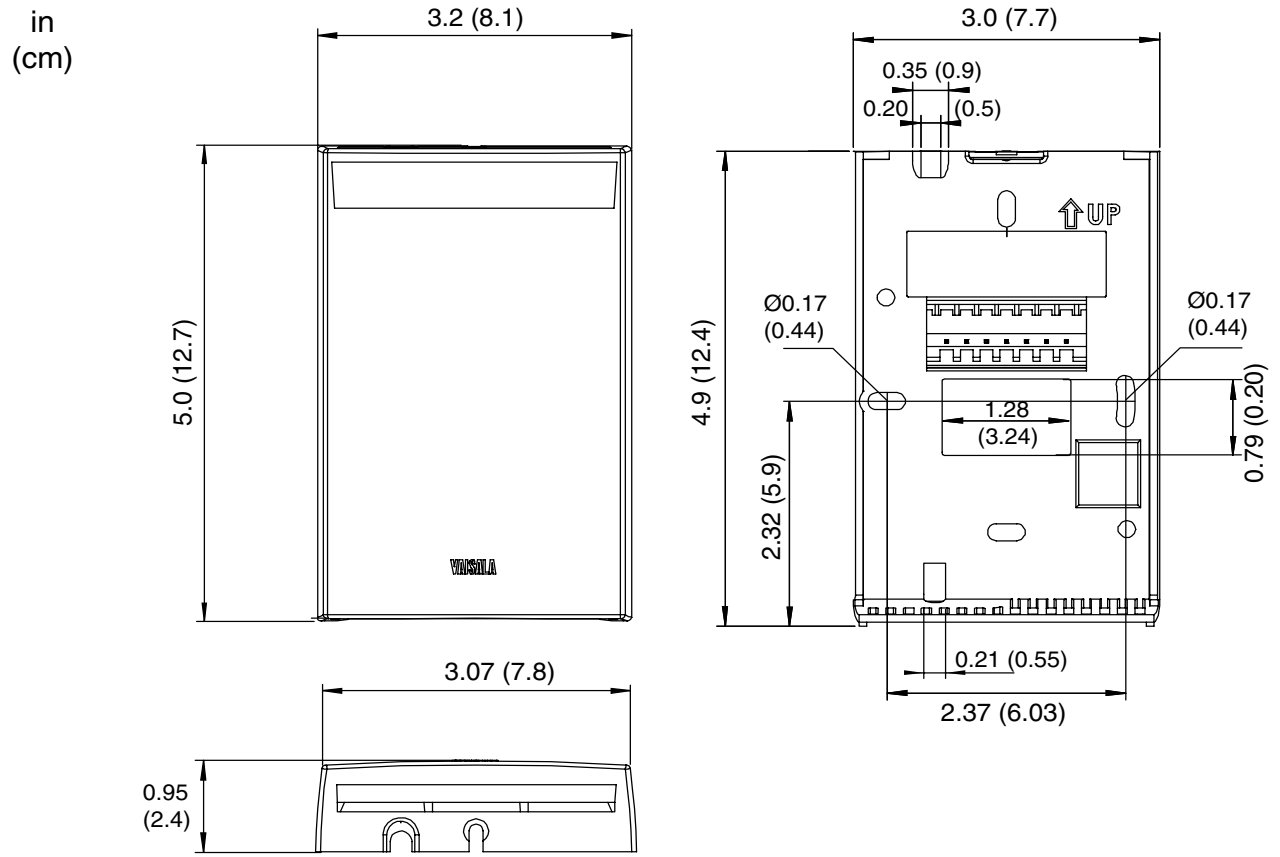
Accuracy	
HMW Series	Humidity ±3%, 0 to 70% RH, 50° to 86°F (10° to 30°C)
TMW Series	Temperature ±0.9°F (± 0.50°C)
Thermal Effect	Temperature compensated with less than 0.005% per °F (0.01% per °C)
Supply Voltage	
HMW82/TMW82	20 to 28 VDC
HMW83/TMW83	18 to 35 VDC/24 VAC ±20%
Signal Output	
HMW82/TMW82	4-20 mA (loop powered)
HMW83/TMW83	0 to 10 VDC
Maximum Output Impedance	600Ω
Minimum Output Impedance	10 kΩ

Measurement Range	
Humidity	0 to 100% RH
Temperature	23° to 131°F (-5° to 55°C)
Sensing Technology	
Humidity	Replaceable Vaisala Intercap®
Temperature	Digital Temperature Sensor
Operating Humidity	0 to 100% RH non-condensing
Operating Temperature	23° to 131°F (-5° to 55°C)
Enclosure	ABS/ Polycarbonate UL-V0 approved, IP30
Wiring Terminations	Terminal block (22 to 16 AWG)
Approvals	CE (EN61326-1)
Weight	0.25 lb (0.11 kg)
Warranty	2 years

3% ROOM HUMIDITY AND TEMPERATURE TRANSMITTER

HMW80 SERIES

DIMENSIONS



ORDERING INFORMATION

MODEL	DESCRIPTION
HMW82	3% Room humidity and temperature transmitter, 4-20 mA
HMW83	3% Room humidity and temperature transmitter, 0-10 VDC
TMW82	Room temperature transmitter, 2-wire 4-20 mA output
TMW83	Room temperature transmitter, 3-wire 0-10V output

	RELATED PRODUCTS	PAGE
DCP-1.5-W	Power supply, 24 VAC IN to 24 VDC OUT	**995**
DCPA-1.2	Power supply, 120 VAC IN to 24 VAC/24 VDC OUT	**994**
691-K0A	Control transformer, 120:24 VAC, 40 VA, Class 2	**979**

3% DUCT HUMIDITY AND TEMPERATURE TRANSMITTER

HMD42, HMD53

DESCRIPTION

The **Vaisala HMD42 and HMD53 Duct Mounted Humidity Transmiitters** are designed for building automation applications. They combine reliable operation with excellent stability, providing low cost of ownership to the user. The **HMD42** and **HMD53** transmitters measure humidity with a ±3% RH accuracy and temperature with a ±0.54°F (±0.3°C) accuracy. They feature various selectable analog output signals and they can be powered by either AC or DC voltage.

The **HMD42** and **HMD53** humidity transmitters use the interchangeable Vaisala INTERCAP® Sensor. The transmitters require no recalibration if the sensor is changed. The duct mount **HMD42** and **HMD53** transmitters can be installed in various measurement environments due to the robust IP65 (NEMA4) rated metal enclosure which protects the sensor from dust and splashes of water.

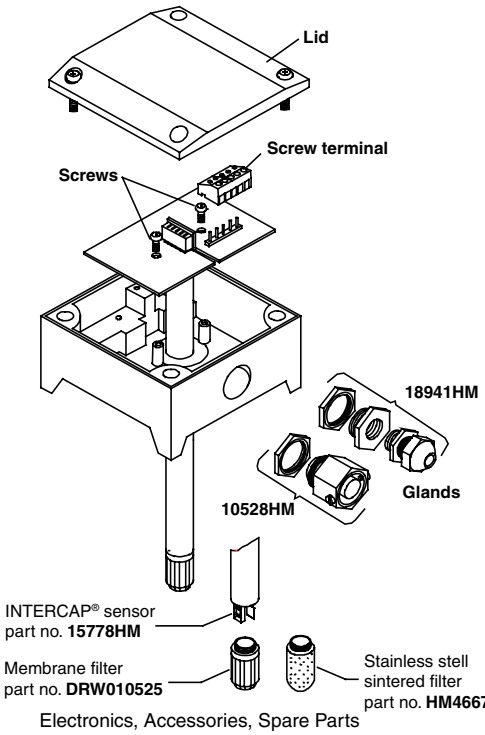
FEATURES

- ***Duct mount***
- ***±3% RH accuracy***
- ***No recalibration required***
- ***Easy to replace interchangeable sensor***
- ***Current or selectable voltage output***

SPECIFICATIONS

Accuracy	
Humidity	±3% RH
Temperature	±0.72°F (0.4°C)
Stability	RH: ±2% RH/2 years
Supply Voltage	
HMD42	10-35 VDC
HMD53	10 to 35 VDC, 9 to 24 VAC @ 0.3 VA (signal dependent) @ 0.3 VA (signal dependent)
Signal Output	
HMD42	4-20 mA
HMD53	0 to 1, 0 to 5, 0 to 10 VDC
Maximum Output Impedance mA	500Ω
Minimum Output Impedance VDC	20 kΩ
Measurement Range	
Humidity	0 to 100%
Temperature	-40° to 140°F (-40° to 60°C)
Sensing Technology	
Humidity	Replaceable Vaisala INTERCAP®
Temperature	Pt 1000 RTD
Operating Humidity	0 to 100% RH
Operating Temperature	23° to 131°F (-5° to 55°C)
Enclosure	Cast aluminum
Enclosure Rating	NEMA 4 (IP65)
Probe	Stainless steel
Wiring Terminations	Screw terminal
Approvals	CE (EN61326-1, EN55022)
Weight	0.6 lb (0.3 kg)
Warranty	1 year

PRODUCT DIAGRAM



Electronics, Accessories, Spare Parts

Removing and Reinstalling the Sensor Head

1. Open the lid.
2. Disconnect the screw terminal.
3. Open the screws (2 pcs.)
4. Pull the sensor head out carefully.
5. To reinstall, push in the sensor head.
6. Reassemble in reverse order.

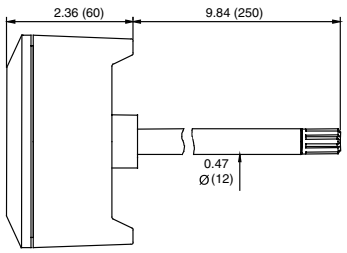
Replacement of the Intercap Sensor

If the INTERCAP® sensor is damaged, remove it and insert a new one. Recalibration is not needed.
If the filter is dirty, replace it to ensure a maximum lifetime and fast response for the sensor. Do not attempt to clean the filter.

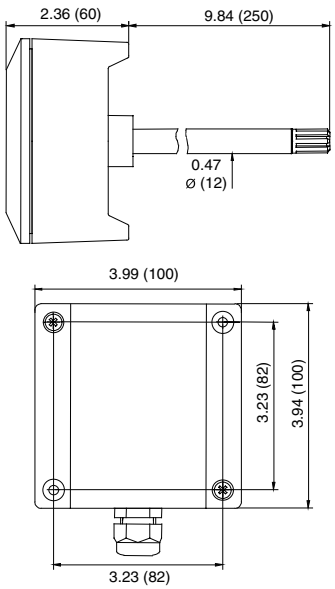
3% DUCT HUMIDITY AND TEMPERATURE TRANSMITTER

HMD42, HMD53

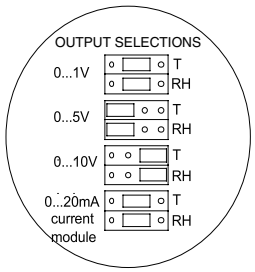
DIMENSIONS



HMD42 Dimensions



HMD53 Dimensions

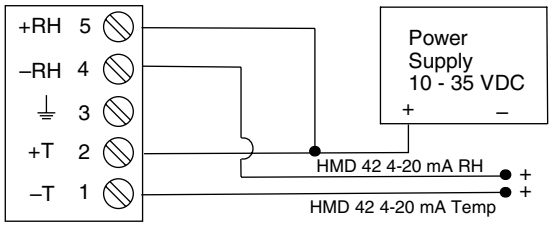


INSTALLATION OF THE CURRENT MODULE

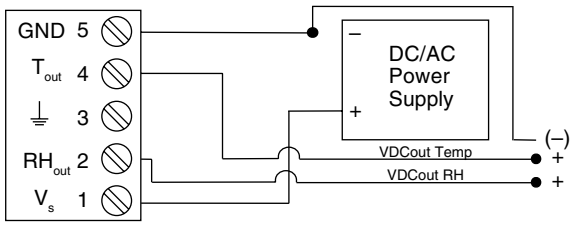
1. Take off the jumpers
2. Connect the module; note the right direction!
3. Connect the power supply

WIRING

HMD 42



HMD 53



ORDERING INFORMATION

MODEL	DESCRIPTION
HMD42	Duct mount, humidity 4-20 mA output
HMD53	Duct mount, humidity and temperature, 0-1 V, 0-5V, and 0-10 V output

	RELATED PRODUCTS	PAGE
15778HM	Replaceable humidity sensor	
DCPA-1.2	Power supply, 120 VAC IN to 24 VAC/24 VDC OUT	**994**
691-K0A	Control transformer, 120:24 VAC, 40 VA, Class 2	**979**
DCP-1.5-W	Power supply, 24 VAC IN to 24 VDC OUT	**995**

HUMIDITY

ROOM, DUCT, AND OSA 3% HUMIDITY TRANSMITTERS

A/RH3 SERIES

DESCRIPTION

The **ACI A/RH3 Series Relative Humidity Transmitters** utilize a capacitive sensing element to deliver a proportional 4 to 20 mA, 0 to 5 VDC, or 0 to 10 VDC output. it is available for room, duct, outside, and stainless steel wall plate applications. The **A/RH3 Series** has on board DIP switches which allow the user to select the desired output signal and can be powered by AC or DC power sources.

Each **A/RH3 Series** humidity transmitter is calibrated using a NIST Traceable Temperature/Humidity Chamber. Three and five point NIST calibration certificates are available and optional.

FEATURES

- ***±3% accuracy***
- ***Three-year warranty***
- ***Duct and OSA twist-off weatherproof housing***
- ***24 VDC or 24 VAC power (field-selectable)***
- ***4-20 mA, 0-10V, or 0-5V signal (field-selectable)***
- ***Field-calibratable***

SPECIFICATIONS

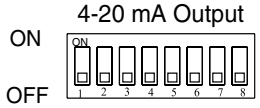
Accuracy	±3% @ 77°F (25°C) from 10% to 95%
Thermal Effect	<0.005% per °F (<0.01 per °C)
Supply Voltage	12-40 VDC or 24 VAC, selectable
Signal Output	4-20 mA, 0-5 VDC, 0-10 VDC (field selectable)
Measurement Range	0% to 100%
Sensing Technology	Capacitive
Operating Temperature	
Room	32° to 122°F (0° to 50°C)
Duct/OSA	-40° to 140°F (-40° to 60°C)
Enclosure	
Room	Plastic Delta-style
Duct/OSA	Plastic weatherproof

Dimensions	
Room	3.8"H x 2.8"W x 0.9"D (9.8 x 7 x 2.3 cm)
Duct	3.6" (9 cm) Ø head with 8.15"L (20 cm) probe 0.75" (1.9 cm) Ø
OSA	3.6" (9 cm) Ø head with 3.0"L (7.6 cm) probe 1.4" (3.6 cm) Ø
Weight	
Room	0.22 lb (0.1 kg)
Duct	1.21 lb (0.54 kg)
OSA	0.6 lb (0.27 kg)
SP	0.2 lb (0.09 kg)
Approvals	CE, RoHS
Warranty	5 years

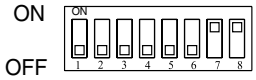
WIRING

Output Selection Switches (SW 1)

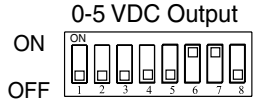
4-20 mA Output



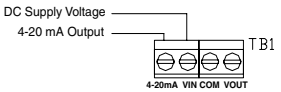
0-10 VDC Output



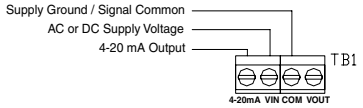
0-5 VDC Output



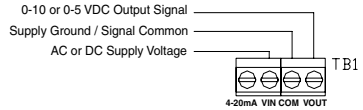
2 Wire Current Output Signal



3 Wire Current Output Signal



Voltage Output Signal

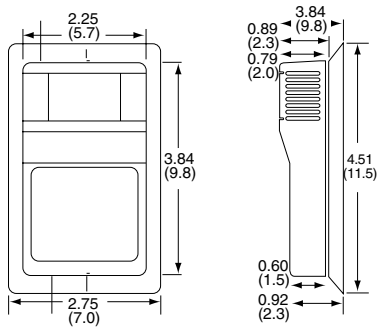


ROOM, DUCT, AND OSA 3% HUMIDITY TRANSMITTERS

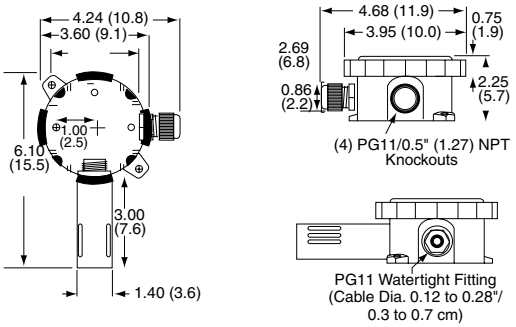
A/RH3 SERIES

DIMENSIONS

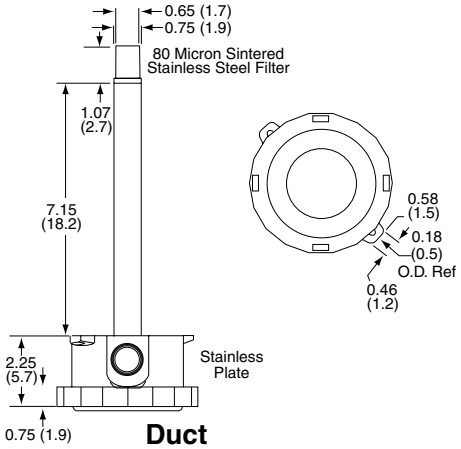
in
(cm)



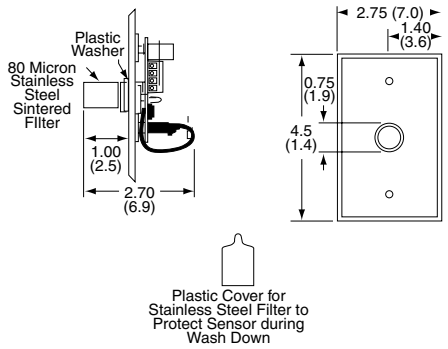
Room



Outside



Duct



Stainless Plate

ORDERING INFORMATION

MODEL	DESCRIPTION	
A/RH3	3% accuracy humidity transmitter	
	AN	Type III 10,000Ω thermistor
	CP	Type II 10,000Ω thermistor
	20K	20,000Ω thermistor
	100	100Ω 385 PT RTD
	1K	1,000Ω 385 PT RTD
		R Room
		D Duct
		O Outside air
		SP Stainless steel plate passive sensors only

A/RH3 - **100** - **R**

Example: **A/RH3-100-R** A 3% accuracy room humidity transmitter with 100Ω RTD

RELATED PRODUCTS		PAGE
DCP-1.5-W	Power supply, 24 VAC IN to 24 VDC OUT	**995**
DCPA-1.2	Power supply, 120 VAC IN to 24 VAC/24 VDC OUT	**994**
691-K0A	Control transformer, 120:24 VAC, 40 VA, Class 2	**979**

HUMIDITY

3% ROOM, DUCT, AND OSA HUMIDITY TRANSMITTERS

BA/H300 SERIES

DESCRIPTION

The **BAPI Model BA/H Series 3% Accuracy Humidity Transmitters** are designed specifically for HVAC systems. The room transmitters use Delta or BAPI-Stat II enclosures with optional communication jacks. All duct and OSA units come in weatherproof enclosures selectable for NEMA 3R or IP66 applications. All **BA/H** transmitters have optional temperature sensors or temperature transmitters. Transmitter outputs include 4-20mA, 0-5V ad 0-10V with replaceable sensors.

Delta-Style Enclosure

BAPIBox 2 Enclosure

FEATURES

- ***Popular room housing***
- ***Accuracies of 3%***
- ***Three-year warranty***
- ***Duct and OSA twist-off NEMA 4 housing***
- ***24 VDC or 24 VAC power (field-selectable)***
- ***4-20 mA, 0-10V, or 0-5V signal (field-selectable)***
- ***Field calibratable***
- ***Optional temperature sensor***

NEMA 4 (BB) Duct Unit

Weatherproof (WP) Duct Unit

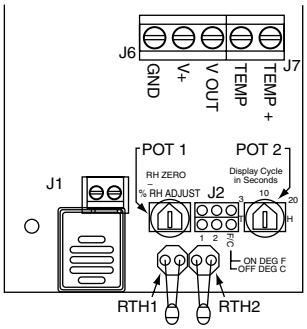
SPECIFICATIONS

Accuracy	3%, from 20% to 95% RH
Supply Voltage	15-26 VAC/VDC
Signal Output	4-20 mA, 0-5 VDC
Maximum Output Impedance	700Ω maximum @24 VDC
Minimum Output Impedance	10 kΩ minimum
Sensing Technology	Resistive with ceramic substrate
Sensor Protection	
Room	Room Gore-Tex®
Duct/OSA	100 micron stainless steel sintered filter
Operating Humidity	0-100%, non-condensing
Operating Temperature	
Room	32° to 122°F (0° to 50°C)
Duct/OSA	-22° to 158°F (-30° to 70°C)

Enclosure	
Room	ABS Plastic, UL94V-0
Duct/OSA	
BAPIBox (BB)	IP66 rated UV resistant polycarbonate
BAPIBox II (BB2)	IP66 rated, UV resistant polycarbonate
WP	Weather Proof, NEMA 3R, Cast aluminum
Wiring Terminations	Four wire, 16 to 22 AWG terminals
Weight	
Room	0.25 lb (0.11 Kg)
Duct/OSA	
BB/BB2	1.0 lb (0.45 Kg)
WP	1.3 lb (0.55 Kg)
Approvals	CE, RoHS
Warranty	2 years

ROOM, DUCT, AND OSA 3% HUMIDITY TRANSMITTERS
BA/H300 SERIES

WIRING



Room Humidity Circuit Board

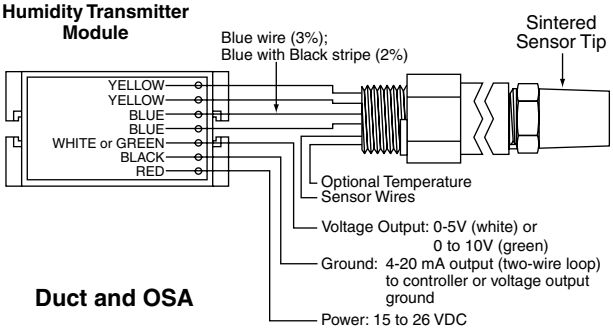
4 TO 20 mA TERMINATION

Terminal Legend	Function
GND	4 to 20 mA signal (to analog input of controller)
V+	+15 to +26 VDC
TEMP	Optional temperature sensor
TEMP	Optional temperature sensor

0 TO 5 VDC TERMINATION

Terminal Legend	Function
GND	To controller ground (GND or common)
V+	+15 to +26 VAC/VDC
V OUT	0 to 5 VDC or 0 to 10V signal (to analog input of controller)
TEMP	Optional temperature sensor
TEMP	Optional temperature sensor

Humidity Transmitter Module



Duct and OSA

ORDERING INFORMATION

BAPI ROOM HUMIDITY TRANSMITTER		
MODEL	**DESCRIPTION**	
BA/H300R	3% Humidity Transmitter, 4-20 mA output, Delta enclosure	
BA/H310R	3% Humidity Transmitter, 0-10 VDC output, Delta Enclosure	
	DISPLAY OPTION	
	D	LCD Display

Example: **BA/H300RD** 3% Room humidity transmitter, 4-20 mA output, with LCD display

BAPI DUCT HUMIDITY SENSOR		
MODEL	**DESCRIPTION**	
BA/H300	3% Humidity w/ Interchangeable Output of 0-5 VDC or 4-20 mA output	
BA/H310	3% Humidity, 0-10 VDC output	
BA/H312	3% Humidity, 2-10 VDC output	
	ENCLOSURE OPTION	
	DBB	BapiBox Enclosure, IP66 Rated, UV Resistant Polycarbonate
	DBB2	BapiBox2 Enclosure, IP66 Rated, UV Resistant Polycarbonate
	DWP	Weatherproof Enclosure, NEMA 3R Rated Metal Enclosure

Example: **BA/H300DBB2** 3% Duct mount humidity transmitter, 0-10 VDC output, BB2 enclosure

BAPI OSA HUMIDITY SENSOR		
MODEL	**DESCRIPTION**	
BA/H300	3% Humidity w/ Interchangeable Output of 0-5 VDC or 4-20 mA output	
BA/H310	3% Humidity, 0-10 VDC output	
BA/H312	3% Humidity, 2-10 VDC output	
	ENCLOSURE OPTION	
	OBB	BapiBox Enclosure, IP66 Rated, UV Resistant Polycarbonate
	OBB2	BapiBox2 Enclosure, IP66 Rated, UV Resistant Polycarbonate
	OWP	Weatherproof Enclosure, NEMA 3R Rated Metal Enclosure

Example: **BA/H300OWP** 3% OSA mount humidity transmitter, 4-20 mA output, weather proof housing

RELATED PRODUCTS		PAGE
BA/ADP-525-7-CPW	Copla white 7" x 5.25" adaptor plate	
BA/FOAMBACK	White foam back insulator	
BA/FOAMBACK-GRAY	Gray foam back insulator	
UR	Moisture-resistant three-wire butt splice	
DCPA-1.2	Power supply, 120 VAC IN to 24 VAC/24 VDC OUT	**994**
DCP-1.5-W	Power supply, 24 VAC IN to 24 VDC OUT	**995**
BA/ADP-525-7-OFW	Off white 7" x 5.25" adaptor plate	
BA/ADP-525-7-WMW	Warm white 7" x 5.25" adaptor plate	

ROOM, DUCT, AND OSA 3% HUMIDITY TRANSMITTERS

SRH13 SERIES

DESCRIPTION

Designed for the HVAC control system, the **Setra SRH13 Series** of humidity transmitters offer reliable measurement of RH levels from 0 to 100% RH with an accuracy of ±3%. Available in wall, duct, and outside air configurations, the **SRH13** Series transmitters are easy to install and service if necessary. The transmitters have a field replaceable sensor tip that allows the end user to replace sensors in the field eliminating factory calibration and downtime.

FEATURES

- ***±3% RH accuracy***
- ***No recalibration required***
- ***Replaceable sensor***
- ***Capacitive sensor technology***
- ***Reverse polarity protection***

SRH113PW

SRH13PD

SRH13P0

WIRING

Shield	6	← Ground connection
	5	(not used)
	4	(not used)
	3	(not used)
RTN/COM	2	→ RH (4 to 20 mA) output
+EXC	1	← Vin

SPECIFICATIONS

Accuracy	3% RH (0-100% RH) @ 73°F (23°C)
Stability	<1%RH/yr @ 73°F (23°C), 50% RH
Supply Voltage	12-30 VDC
Signal Output	4-20 mA, 2-wire
Maximum Output Impedance	700Ω @ 24 VDC, Ω = (supply - 10) / 0.02
Sensing Technology	Replaceable capacitive
Sensor Protection	Porous polyethylene
Protection	Reverse polarity protection
Operating Humidity	0 to100%
Operating Temperature	-40° to 140°F (-40° to 60°C)
Enclosure	
Room	ABS plastic (flammability 94V-0)
Duct/OSA	Polycarbonate (flammability, 94V-0), NEMA 4 (IP65)
Wiring Terminations	Pluggable terminal block

Dimensions	
Room	4.7"H x 2.8"W x 1.0"D (12 x 7 x 2.5 cm)
Duct	5.1"L x 2.7"W x 2.4"D (13 x 6.8 x 7 cm) 8.5" (21.6 cm) probe length 1/2" probe Ø
OSA	6.1"L x 4"W x 12.5"D (15.5 x 10 x 32 cm)
Approvals	CE, RoHS
Weight	
Room	0.5 lb (0.23 kg)
Duct	1.3 lb (0.59 kg)
OSA	2.6 lb (1.2 kg)
Warranty	1 year (sensor) 3 years (electronics only)

ORDERING INFORMATION

MODEL	DESCRIPTION
SRH13PO11T0N	3% Outside air humidity transmitter, 4-20 mA output
SRH13PD11T0N	3% Duct mount humidity transmitter, 4-20 mA output
SRH13PW11T0N	3% Wall mount humidity transmitter, 4-20 mA output

ACCESSORIES

SR33PT0	Replacement 3% humidity sensor

RELATED PRODUCTS		PAGE
DCPA-1.2	Power supply, 120 VAC IN to 24 VAC/24 VDC OUT	**994**
DCP-1.5-W	Power supply, 24 VAC IN to 24 VDC OUT	**995**

ROOM, DUCT AND OSA 3% HUMIDITY TRANSMITTERS

GEH3 SERIES

NEW!

Amphenol
Advanced Sensors

DESCRIPTION

The **Amphenol Advance Systems Model GEH3 Series 3% Accuracy Humidity Transmitters** are designed specifically for commercial building automation systems (BAS). The room, duct, and OSA transmitters have replaceable sensor tips and switch-selectable outputs of 4-20 mA, 0-5 VDC or 0-10 VDC. The **GEH3** Series also has an optional temperature transmitter, which has the same selectable outputs as humidity. All duct and OSA units come in weather-resistant enclosures rated for IP42 or NEMA 3R applications.

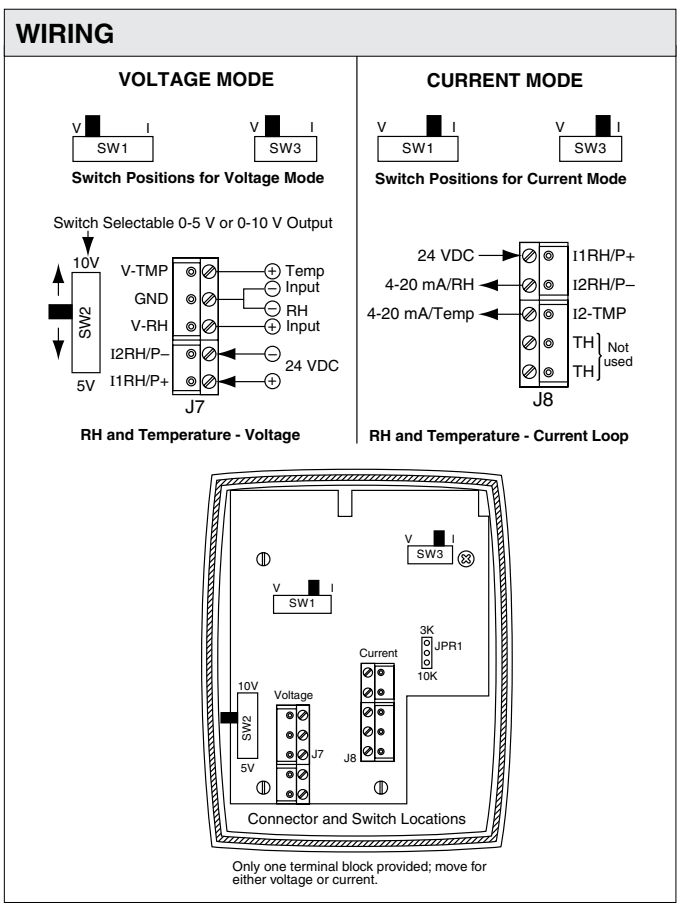
FEATURES

- ***±3% accuracy***
- ***Temperature compensated***
- ***Field-selectable 4-20 mA, 0-10V, or 0-5V outputs***
- ***Replaceable sensor***
- ***Optional temperature transmitter***

SPECIFICATIONS

Accuracy	3% (10% to 90%)
Supply Voltage	12-30 VDC, 2.4 VA
Signal Output	4-20 mA/0-5V/0-10V selectable; 0-100% RH
Maximum Output Impedance mA	700 maximum @ 24 VDC
Minimum Output Impedance VDC	10 k minimum
Sensing Technology	Capacitive and replaceable
Operating Humidity	0% to 99%, non-condensing
Operating Temperature	-40° to 140°F (-40° to 60°C)
Enclosure Rating	
Room	ABS plastic, UL94V Room Installed IP20, NEMA 1
Duct/OSA	IP42, NEMA 3R Stainless steel with removable tip, PTFE Teflon® Shield
Wiring Terminations	16 to 22 AWG terminals
Weight	
Room	0.5 lb. (0.23 kg)
Duct/OSA	1.3 lb. (0.59 Kg)
Warranty	2 years

WIRING



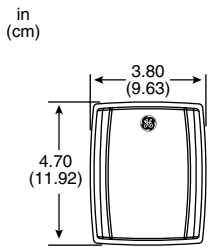
Only one terminal block provided; move for either voltage or current.

NEW!

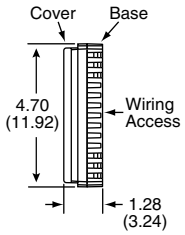
ROOM, DUCT AND OSA 3% HUMIDITY TRANSMITTERS

GEH3 SERIES

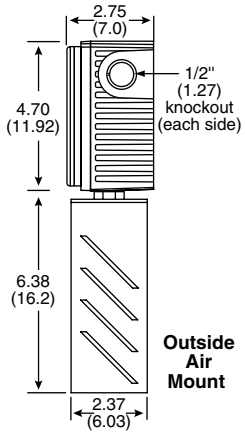
WIRING



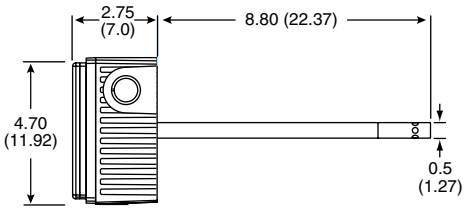
Cover (all mounts)



Space (Wall) Mount



Outside Air Mount



Duct Mount

9

HUMIDITY

ORDERING INFORMATION

MODEL	DESCRIPTION	
GEH3	RH transmitter 3% accuracy	
	RH MOUNTING ENCLOSURE	
	S	Decorative room mounting enclosure
	D	Duct mounting with ABS plastic IP42 enclosure
	O	OSA mounting with ABS plastic IP42 enclosure and weather shield
	SN	Decorative room mounting enclosure with NIST certificate
	DN	Duct mounting with ABS plastic IP42 enclosure with NIST certificate
	ON	OSA mounting with ABS plastic IP42 enclosure and weather shield with NIST certificate
	TEMPERATURE OPTION	
	TT0	Transmitter, 40° to 90°F (4.4° to 32.2°C) (**S**, **D**, **SN**, and **DN** only)
	TT2	Transmitter, -20° to 140°F (-29° to 60°C) (**D**, **O**, **DN**, and **ON** only)
	TT3	Transmitter, 0° to 100°F (-18° to 38°C) (All enclosure mounts)

Example: GEH3-SN 3% room RH transmitter with NIST certificate
GEH3-D 3% duct RH transmitter

RELATED PRODUCTS		PAGE
DCPA-1.2	Power supply, 120 VAC In to 24 VAC/24 VDC Out	**994**
GEH3-RH	Replaceable 3% humidity sensor for room, duct, and OSA	
GEH3-RHTT	Replaceable 3% humidity and temperature sensor for room, duct and OSA transmitters	
DCP-1.5-W	Power supply, 24 VAC IN to 24 VDC OUT	**995**

NEW!

ROOM, DUCT, AND OSA 5% HUMIDITY TRANSMITTERS

KH5 SERIES

DESCRIPTION

The **Kele KHR, KHD, and KHO Series Humidity Transmitters** are specifically designed for use in HVAC/BAS applications. These instruments measure relative humidity from 0% to 100%. The standard two-wire, 4-20 mA output provides low-cost humidity monitoring for building control. The RH transmitters are available with thermistor or RTD temperature sensors. They come in room (KHR), duct (KHD), and OSA (KHO) mounting styles.

FEATURES

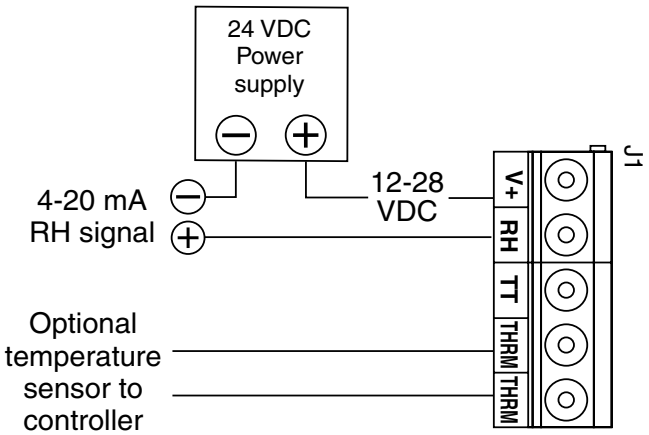
- ***Calibration-free interchangeable sensors***
- ***Twelve-point computerized calibration***

SPECIFICATIONS

Accuracy	5% RH @ 73°F (23°C) from 5% to 90% RH; (0%-5% & 90%-100%) add 5%
Drift	<±0.5% drift per year
Thermal Effect	0.05%/°F
Supply Voltage	9.5- 28 VDC
Signal Output	4-20 mA = 0% to 100% RH, two-wire, loop-powered Passive temperature output: All Kele standard thermistors and RTDs
Maximum Output Impedance	(Supply voltage - 9.5 VDC) / 0.02, 725Ω @ 24 VDC
Sensing Technology	Precon HS-2000 capacitive
Operating Temperature	-20° to 158°F (-29° to 70°C)

Enclosure Rating	
KHR	White plastic, UL94HB
KHD	Metal handy box
KHO	NEMA 3R plastic box
Probe	
KHD	1/2" aluminum tube with expanded Teflon® filter
KHO	1/2" aluminum tube with 40 micron stainless steel sintered filter
Wiring Terminations	Screw terminals
Weight (without options)	
KHR	0.2 lb (0.09 kg)
KHD	1.2 lb (0.54 kg)
KHR	0.5 lb (0.23 kg)
Approvals	RoHS
Warranty	18 months

WIRING

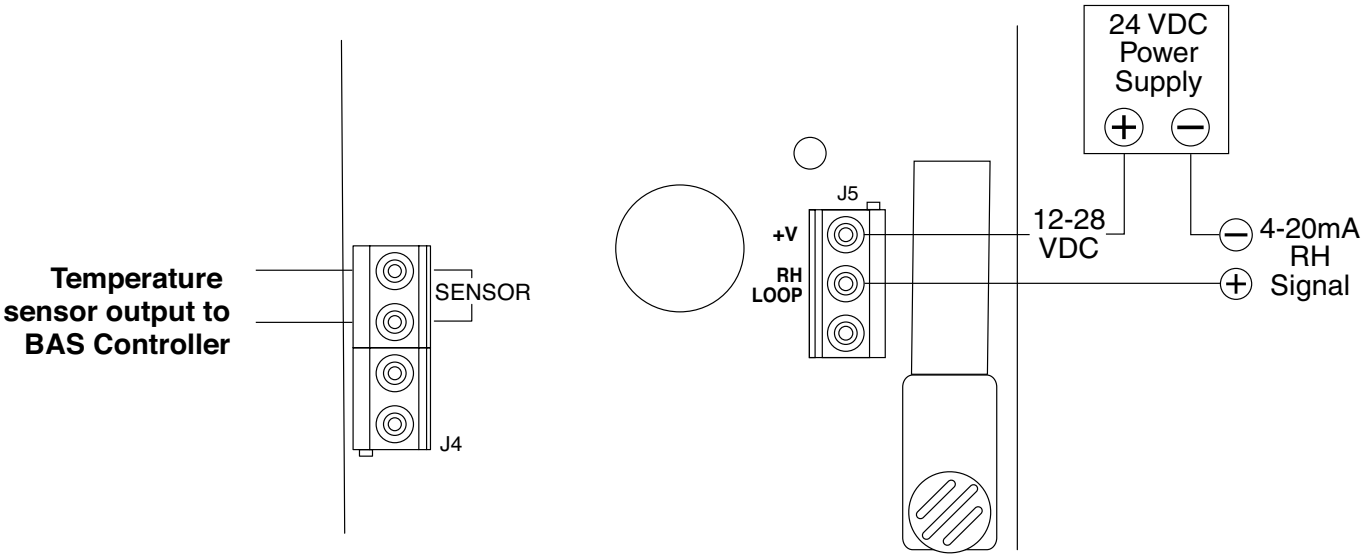


HUMIDITY

ROOM, DUCT, AND OSA 5% HUMIDITY TRANSMITTERS

KH5 SERIES

INSTALLATION



ORDERING INFORMATION

MODEL	DESCRIPTION
KHD5	Duct mounted 5% humidity transmitter
KHO5	Outside air 5% humidity transmitter
KHR5	Wall mounted room/space 5% humidity transmitter

Optional temperature ranges	
T3	10,000Ω thermistor @ 77˚F (26˚C), Type III
T21	2252Ω thermistor @ 77˚F (26˚C), Type II
T22	3000Ω thermistor @ 77˚F (26˚C), Type II
T24	10,000Ω thermistor @ 77˚F (26˚C), Type II
T27	100,000Ω thermistor @ 77˚F (26˚C), Type II
T42	20,000Ω thermistor @ 77˚F (26˚C), Type IV
T81	100Ω RTD @ 32˚F (0˚C), 385 platinum curve
T85	1000Ω RTD @32˚F (0˚C), 385 platinum curve
T91	1000Ω RTD @ 32˚F (0˚C), 375 platinum curve

OPTIONS	
CL1	Custom one color logo, KHR5 only
XJ1	RJ11 externally-accessible communication jack (CCRJ11AD required), KHR5 only
XJ2	Internal RJ11 communication jack, KHR5 only
XLED	LED indicator lamp 24V AC/DC green, KHR5 only
XMB	Momentary pushbutton switch, jumpered across sensor or pot (JP1), KHR5 only
WP	Weatherproof housing, KHD5 only

KHD5 — **T3** — **WP**

Example: **KHD5-T3-WP** Duct mounted 5% humidity transmitter with 10,000Ω thermistor @ 77˚F (26˚C), Type III and weatherproof housing

RELATED PRODUCTS		PAGE
DCPA-1.2	Power supply, 120 VAC IN to 24 VAC/24 VDC OUT	**994**
DCP-1.5-W	Power supply, 24 VAC IN to 24 VDC OUT	**995**

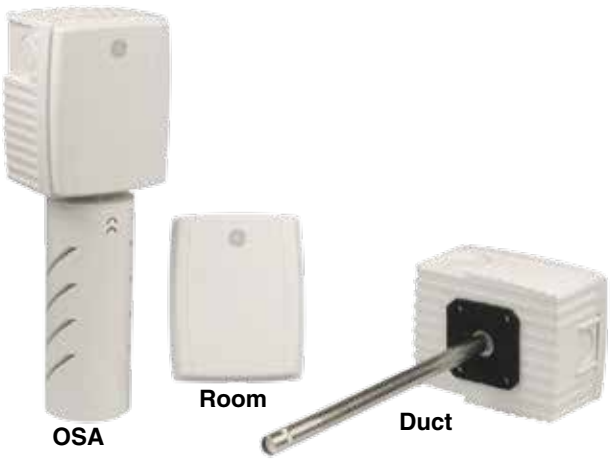
ROOM, DUCT, AND OSA 5% HUMIDITY TRANSMITTERS

GEH5 SERIES

Amphenol
Advanced Sensors

DESCRIPTION

The **Amphenol Advanced Sensors Model GEH5 Series 5% Accuracy Humidity Transmitters** are designed specifically for commercial building automation systems (BAS). The room, duct, and OSA transmitters have replaceable sensor tips and switch-selectable outputs of 4-20 mA, 0-5 VDC or 0-10 VDC. The **GEH5 Series** also has an optional temperature transmitter, which has the same selectable outputs as humidity. All duct and OSA units come in weather-resistant enclosures rated for IP42 or NEMA 3R applications.



FEATURES

- ***±5% accuracy***
- ***Temperature compensated***
- ***Field-selectable 4-20 mA, 0-10V, or 0-5V outputs***
- ***Replaceable sensor***
- ***Optional temperature transmitter***

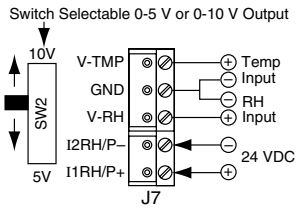
SPECIFICATIONS

Accuracy	5% (10% to 90%)
Supply Voltage	18-30 VDC, 100 mA
Signal Output	4-20 mA/0-5V/0-10V selectable; 0-100% RH
Maximum Output Impedance	700Ω maximum @ 24 VDC
Minimum Output Impedance	10 kΩ minimum
Sensing Technology	Capacitive and replaceable
Operating Humidity	0% to 99%, non-condensing
Operating Temperature	-40° to 140°F (-40° to 60°C)
Enclosure Rating	
Room	ABS plastic, UL94V Room Installed IP20, NEMA 1
Duct/OSA	IP42, NEMA 3R Stainless steel with removable tip, PTFE Teflon® shield
Wiring Terminations	16 to 22 AWG terminals
Weight	
Room	0.34 lb (0.15 Kg)
Duct	0.96 lb (0.44 Kg)
OSA	1.22 lb (0.55 Kg)
Warranty	2 years

WIRING

VOLTAGE MODE

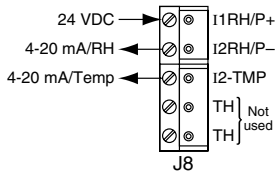
Switch Positions for Voltage Mode



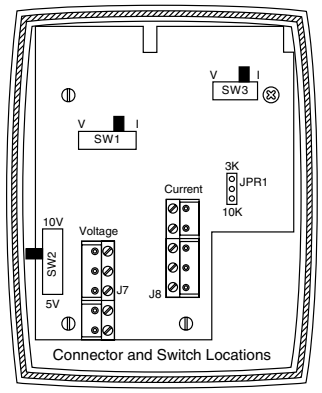
RH and Temperature - Voltage

CURRENT MODE

Switch Positions for Current Mode



RH and Temperature - Current Loop

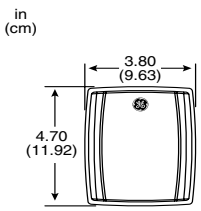


Only one terminal block provided; move for either voltage or current.

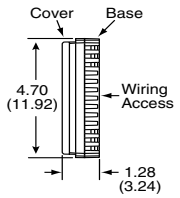
ROOM, DUCT, AND OSA 5% HUMIDITY TRANSMITTERS

GEH5 SERIES

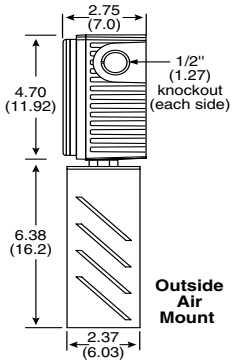
WIRING

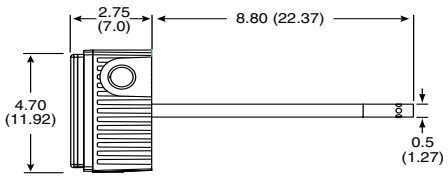


Cover (all mounts)



Space (Wall) Mount





Duct Mount

ORDERING INFORMATION

MODEL	DESCRIPTION	
GEH5	RH transmitter 5% accuracy	
	RH MOUNTING ENCLOSURE	
	S	Decorative room mounting enclosure
	D	Duct mounting with ABS plastic IP42 enclosure
	O	OSA mounting with ABS plastic IP42 enclosure and weather shield
	SN	Decorative room mounting enclosure with NIST certificate
	DN	Duct mounting with ABS plastic IP42 enclosure with NIST certificate
	ON	OSA mounting with ABS plastic IP42 enclosure and weather shield with NIST certificate
	TEMPERATURE OPTION	
	TT0	Transmitter, 40° to 90°F (4.4° to 32.2°C) (**S**, **D**, **SN**, and **DN** only)
	TT2	Transmitter, -20° to 140°F (-29° to 60°C) (**D**, **O**, **DN**, and **ON** only)
	TT3	Transmitter, 0° to 100°F (-18° to 38°C) (All enclosure mounts)

Example: **GEH5-SN** 5% room RH transmitter with NIST certificate
GEH5-D 5% duct RH transmitter

RELATED PRODUCTS		PAGE
GEH5-RH	Replaceable 5% humidity sensor for room, duct, and OSA transmitters	
GEH5-RHTT	Replaceable 5% humidity and temperature sensor for room, duct and OSA transmitters	
DCPA-1.2	Power supply, 120 VAC IN to 24 VAC/24 VDC OUT	**994**
DCP-1.5-W	Power supply, 24 VAC IN to 24 VDC OUT	**995**

ROOM, DUCT, AND OSA 5% HUMIDITY TRANSMITTERS

A/RH5 SERIES

DESCRIPTION

The **ACI A/RH5 Series Relative Humidity Transmitters** utilize a capacitive sensing element to deliver a proportional 4 to 20 mA, 0 to 5 VDC, or 0 to 10 VDC output. It is available for room, duct, outside, and stainless steel wall plate applications. The **A/RH5 Series** has on board DIP switches which allow the user to select the desired output signal and can be powered by AC or DC power sources.

FEATURES

- ***Popular room housing***
- ***Five-year warranty***
- ***Duct and OSA twist-off NEMA 4 housing***
- ***24 VDC or 24 VAC power***
- ***Field selectable current or voltage outputs***
- ***Single point field calibration***
- ***Digital display option***
- ***Optional temperature sensor***

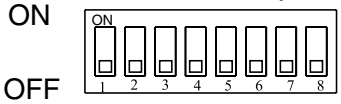
SPECIFICATIONS

Accuracy	±5% @ 77°F (25°C) from 10% to 95%
Thermal Effect	<0.005% per °F (<0.01 per °C)
Supply Voltage	12-40 VDC or 24 VAC, selectable
Signal Output	4-20 mA, 0-5 VDC, 0-10 VDC (field selectable)
Measurement Range	0% to 100%
Sensing Technology	Capacitive
Operating Temperature	
Room	32° to 122°F (0° to 50°C)
Duct/OSA	-40° to 140°F (-40° to 60°C)
Dimensions	
Room	3.8"H x 2.8"W x 0.9"D (9.8 x 7 x 2.3 cm)
Duct	3.6" (9 cm) Ø head with 8.15"L (20 cm) probe 0.75" (1.9 cm) Ø
OSA	3.6" (9 cm) Ø head with 3.0"L (7.6 cm) probe 1.4" (3.6 cm) Ø
Enclosure	
Room	Plastic Delta-style
Duct/OSA	Plastic weatherproof
Weight	
Room	0.22 lb (0.1 kg)
Duct	1.2 lb (0.54 kg)
OSA	0.6 lb (0.27 kg)
SP	0.2 lb (0.09 kg)
Approvals	CE, RoHS
Warranty	5 years

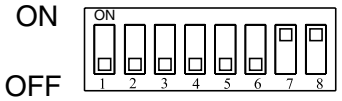
WIRING

Output Selection Switches (SW 1)

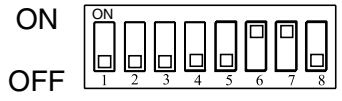
4-20 mA Output



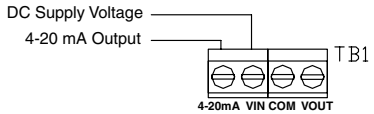
0-10 VDC Output



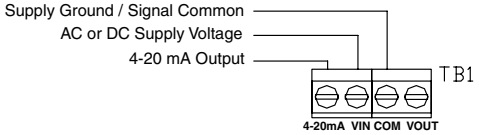
0-5 VDC Output



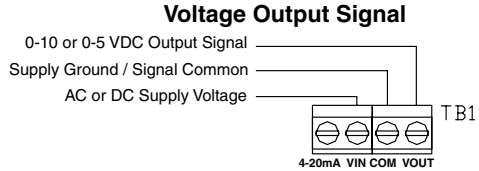
2 Wire Current Output Signal



3 Wire Current Output Signal



Voltage Output Signal



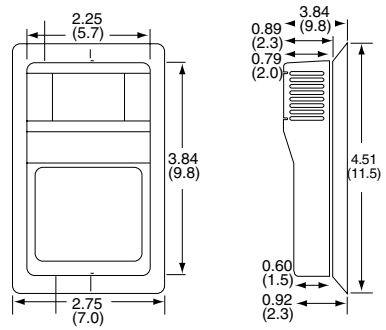
HUMIDITY

ROOM, DUCT, AND OSA 5% HUMIDITY TRANSMITTERS

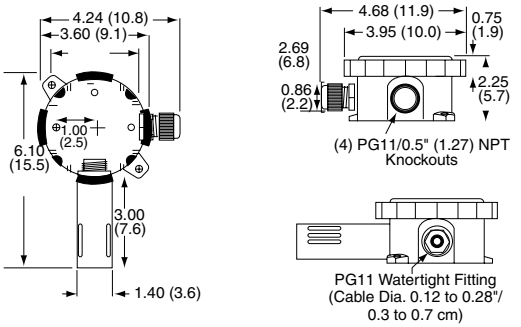
A/RH5 SERIES

DIMENSIONS

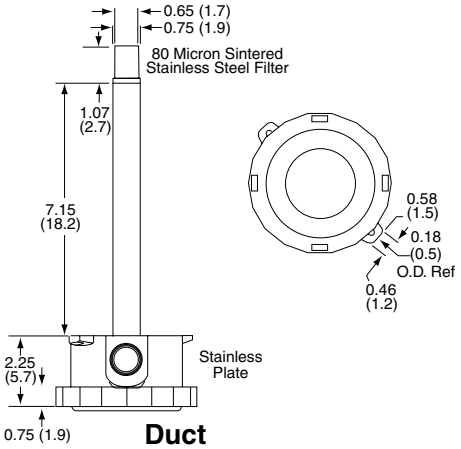
in
(cm)



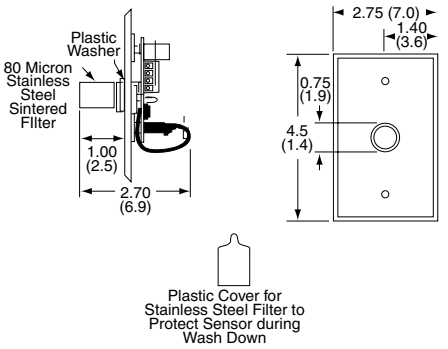
Room



Outside



Duct



Stainless Plate

ORDERING INFORMATION

MODEL	DESCRIPTION	
A/RH5	5% accuracy humidity transmitter	
	AN	Type III 10,000Ω thermistor
	CP	Type II 10,000Ω thermistor
	20K	20,000Ω thermistor
	100	100Ω 385 PT RTD
	1K	1,000Ω 385 PT RTD
		R Room
		D Duct
		O Outside air
		SP Stainless steel plate passive sensors only

A/RH5 - **100** - **R**

Example: **A/RH5-100-R** A 5% accuracy room humidity transmitter with 100Ω RTD

RELATED PRODUCTS		PAGE
DCP-1.5-W	Power supply, 24 VAC IN to 24 VDC OUT	**995**
DCPA-1.2	Power supply, 120 VAC IN to 24 VAC/24 VDC OUT	**994**
691-K0A	Control transformer, 120:24 VAC, 40 VA, Class 2	**979**

ROOM, DUCT, AND OSA 5% HUMIDITY TRANSMITTERS

SRH15 SERIES

DESCRIPTION

Designed for the HVAC control system, the **Setra SRH15 Series Humidity Transmitters** offer reliable measurement of RH levels from 0 to 100% with an accuracy of ±5%. Available in wall, duct, and outside air configurations, the **SRH Series** transmitters are easy to install and service if necessary. The transmitters utilize a field replaceable sensor tip that allows the end user to replace sensors on-site—eliminating factory calibration and downtime.

FEATURES

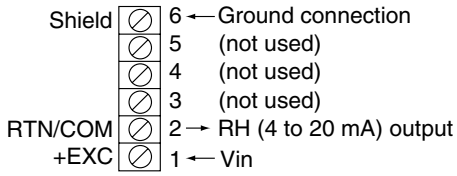
- ***±5% RH accuracy***
- ***No recalibration required***
- ***Replaceable sensor***
- ***Capacitive sensor technology***
- ***Reverse polarity protection***

SRH113PW

SRH13PD

SRH13P0

WIRING



SPECIFICATIONS

Accuracy	5% RH (0-100% RH) @ 73°F (23°C)
Drift	<1% RH/yr @ 73°F (23°C), 50% RH
Supply Voltage	12-30 VDC
Signal Output	4-20 mA, 2-wire
Maximum Output Impedance	700Ω @ 24 VDC Ω = (supply - 10) / 0.02
Sensing Technology	Replaceable capacitive polymer
Sensor Protection	Porous polyethylene
Protection	Reverse polarity protection
Operating Humidity	0 to100%
Operating Temperature	-40° to 140°F (-40° to 60°C)
Enclosure	
Room	ABS plastic (flammability, 94V-0)
Duct/OSA	Polycarbonate (flammability, 94V-0), NEMA 4 (IP65)
Wiring Terminations	Pluggable terminal block
Dimensions	
Room	4.7"H x 2.8"W x 1.0"D (12 x 7 x 2.5 cm)
Duct	5.1"L x 2.7"W x 2.4"D (13 x 6.8 x 7 cm) 8.5" (21.6 cm) probe length 1/2" probe Ø
OSA	6.1"L x 4"W x 12.5"D (15.5 x 10 x 32 cm)
Approvals	CE, RoHS
Weight	
Room	0.5 lb (0.23 kg)
Duct	1.3 lb (0.59 kg)
OSA	2.6 lb (1.2 kg)
Warranty	1 year (sensor) 3 years (electronics only)

ORDERING INFORMATION

MODEL	DESCRIPTION
SRH5PO11T0N	5% Outside air humidity transmitter, 4-20 mA output
SRH5PD11T0N	5% Duct mount humidity transmitter, 4-20 mA output
SRH5PW11T0N	5% Wall mount humidity transmitter, 4-20 mA output

ACCESSORIES

SR35PT0	Replaceable 5% humidity sensor

RELATED PRODUCTS		PAGE
DCPA-1.2	Power supply, 120 VAC IN to 24 VAC/24 VDC OUT	**994**
DCP-1.5-W	Power supply, 24 VAC IN to 24 VDC OUT	**995**

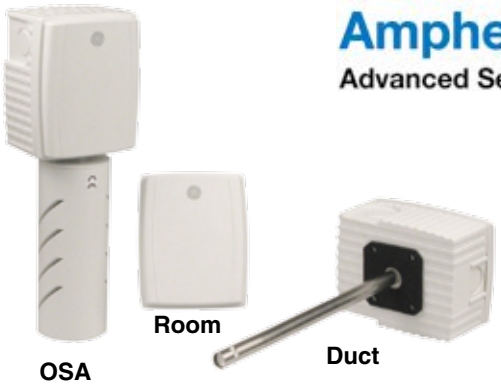
HUMIDITY

DEW POINT, ENTHALPY & WET BULB TRANSMITTERS

DP4A, EN4A, WB4A

DESCRIPTION

The **Amphenol Advanced Sensors Model DP4 Dew Point, WB4 Wet Bulb, and EN4 Enthalpy Transmitters** are rugged, compact, and ideally suited for monitoring dew point, wet bulb, or enthalpy in building automation and process applications. Using a capacitive RH sensor and an RTD temperature sensor, the unit's microprocessor computes the dew point, wet bulb, or enthalpy. Two linear outputs provide a 4-20mA signal for dew point, wet bulb, or enthalpy, and a 4-20 mA signal for dry bulb. temperature.



RoHS

FEATURES

- ***Dew point accuracy of ±1.8°F (±1°C) over the specified range***
- ***Enthalpy accuracy of ±2 BTU/lb over specified range***
- ***Wet bulb accuracy of ±3°F over the specified range***
- ***Dry bulb accuracy of ±.05°F (±0.9°C)over the specified range***
- ***Two 4-20 mA output signals***
- ***Microprocessor-based signal processing***
- ***Weather resistant duct/OSA mounting***
- ***Temperature compensated***

APPLICATIONS

- ***DP4 supply air setpoint (condensation prevention)***
- ***EN4 economizer efficiency***
- ***WB4 evaporative cooling decision potential***

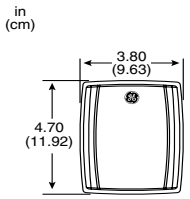
SPECIFICATIONS

Supply Voltage	18-30 VDC, 100 mA
Accuracy	
Enthalpy	±2 BTU/lb
Dew Point	±1.8°F (±1°C)
Wet Bulb	±3°F (±1.7°C)
Dry Bulb	±0.5°F (±0.9°C)
Signal Output	Field selectable: 4-20 mA (700 max load), 0-5 V, or 0-10 V Humidity and dry bulb temperature
Measurement Range	
Dew Point	
Duct/OSA	-20° to 120°F (-28.8° to 49°C)
Space	40° to 90°F (4.4° to 32.2°C)
Enthalpy	
Space/Duct/OSA	0-50 BTU/lb
Wet Bulb	
Duct/OSA	0° to 100°F (-17.8° to 37.8°C)
Space	40° to 90°F (4.4° to 32.2°C)
Dry Bulb	
Duct/OSA	-20° to 120°F (-28.8° to 49°C)
Space	40° to 90°F (4.4° to 32.2°C)
Sensing Technology	Capacitive and replaceable
Operating Humidity	0 to 99% RH, non-condensing
Operating Temperature	-40° to 140°F (-40° to 60°C)
Weight	
Room	0.34 lb (0.15 Kg)
Duct	0.96 lb (0.44 Kg)
OSA	1.22 lb (0.55 Kg)
Warranty	1 year

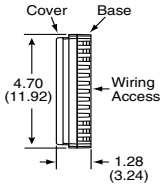
DEW POINT, ENTHALPY & WET BULB TRANSMITTERS

DP4A, EN4A, WB4A

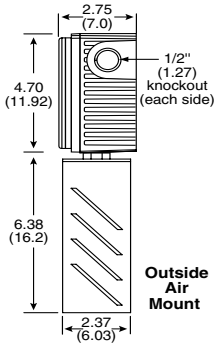
DIMENSIONS



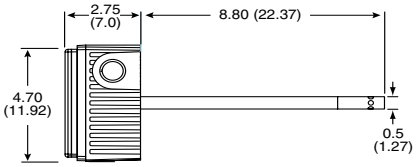
Cover (all mounts)



Space (Wall) Mount



Outside Air Mount



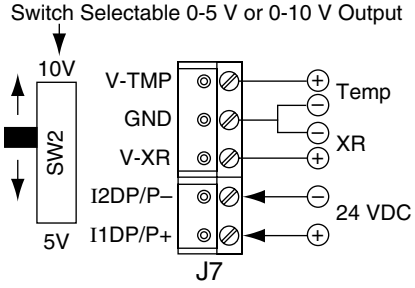
Duct Mount

WIRING

VOLTAGE MODE

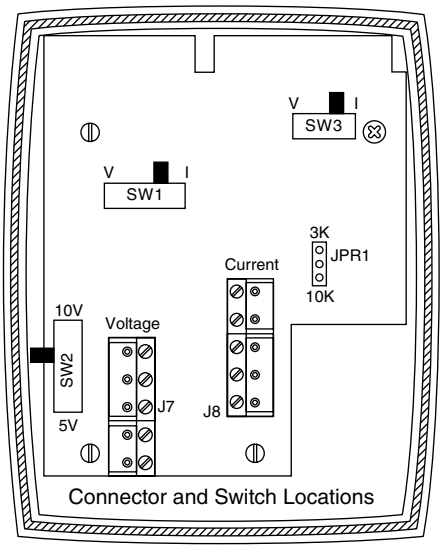
Switch Positions for Voltage Mode

Switch Selectable 0-5 V or 0-10 V Output



XR and Temperature - Voltage

*XR represents; DP - Dewpoint; EN-Enthalpy; WB - Wet bulb

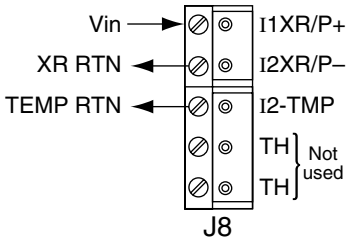


Connector and Switch Locations

Only one terminal block provided; move for either voltage or current.

CURRENT MODE

Switch Positions for Current Mode



XR and Temperature - Current Loop

ORDERING INFORMATION

MODEL	DESCRIPTION
EN4A-D	Duct enthalpy and dry bulb transmitter
EN4A-O	OSA enthalpy and dry bulb transmitter
DP4A-D	Duct dew point and dry bulb transmitter
EN4A-S	Room enthalpy and dry bulb transmitter
DP4A-O	OSA/Wall dew point and dry bulb transmitter
DP4A-S	Room dew point and dry bulb transmitter
WB4A-D	Duct wet bulb and dry bulb transmitter
WB4A-O	OSA wet bulb and dry bulb transmitter
WB4A-S	Room wet bulb and dry bulb transmitter

	RELATED PRODUCTS	PAGE
DCPA-1.2	Power supply, 120 VAC IN to 24 VAC/24 VDC OUT	**994**
DCP-1.5-W	Power supply, 24 VAC IN to 24 VDC OUT	**995**

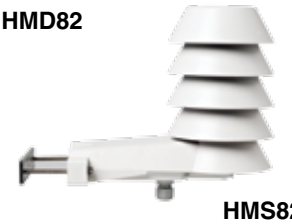
HUMIDITY

DEW POINT, ENTHALPY & WET BULB TRANSMITTERS

HMD/S/W8XD/H/W SERIES

NEW!

HMD82



HMS82

HWM88

VAISALA

CE

DESCRIPTION

The **Vaisala Model HMX8XD Dew Point, HMX8XW Wet Bulb, and HMX8XH Enthalpy Transmitters** are rugged, compact, and ideally suited for monitoring dew point, wet bulb, or enthalpy in building automation and process applications. Using a Vaisala Intercap® RH sensor and an RTD temperature sensor, the unit's microprocessor computes the dew point, wet bulb, or enthalpy. Two linear outputs provide a 4-20mA signal for dew point, wet bulb, or enthalpy, and a 4-20 mA signal for dry bulb. temperature.

FEATURES

- ***Dew point, Wet Bulb and Dry Bulb accuracy of ±1.8°F (±1°C) over the specified range***
- ***Enthalpy accuracy of ±2 BTU/lb over specified range***
- ***Two 4-20 mA output signals***
- ***Microprocessor-based signal processing***
- ***Weather resistant duct/OSA mounting***
- ***Temperature compensated***

APPLICATION

- ***Dew point for supply air setpoint (condensation prevention)***
- ***Enthalpy for economizer efficiency***
- ***Wet bulb for evaporative cooling decision potential***

SPECIFICATIONS

Supply Voltage	10 - 28 VDC
Accuracy	
Dew Point, Wet Bulb & Dry Bulb	±1.8°F (1.0°C)
Enthalpy	±2 BTU/lb
Relative Humidity	±3% RH
Signal Output	(2, Dry Bulb Temperature & Model Specific) 4-20 mA @ 600
Measurement Range	
Dew Point, Wet Bulb & Dry Bulb	-40° to 140°F (-40° to 60°C)
Enthalpy	-10 tp 190 BTU/lb (-40 to 460 kj/hg)
Relative Humidity	0 to 199%
Sensing Technology	Viasal Intercap®
Operating Humidity	0 to 99 % non-condensing
Operating Temperature	-40° to 140°F (-40° to 60°C)
Dimensions	
Duct	5.2" H x 2.8" W x 11.5" D (13.1 x 7.2 x 29.1 cm)
OSA	8.1" H x 4.8" W x 3.9" D (20.7 x 12.2 x 10 cm)
Room	7.6" H x 2.8" W x 1.6" D (19.3 x 7.2 x 4.1 cm)
Approvals	CE
Weight	
Duct	0.65 lb (0.29 Kg)
OSA	1.6 lb (0.72 Kg)
Room	0.25 lb (0.11 Kg)
Warranty	1 year

ORDERING INFORMATION

MODEL	DESCRIPTION
HMD82TD	Duct dew point and dry bulb transmitter
HMS82TD	Outside Air dew point and dry bulb transmitter
HMW88TD	Room dew point and dry bulb transmitter
HMD82H	Duct ehtanlpy and dry bulb transmitter
HMS82H	Outside Air enthalpy and dry bulb transmitter
HMW88H	Room enthalpy and dry bulb transmitter
HMD82W	Duct wet bulb and dry bulb transmitter
HMS82W	Outside Air wet bulb and dry bulb transmitter
HMW88W	Room wet bulb and dry bulb transmitter
HMD82	Duct dry bulb and dry bulb transmitter
HMS82	Outside Air dry bulb and dry bulb transmitter
HMW88	Room dry bulb and dry bulb transmitter

	RELATED PRODUCTS	PAGE
DCPA-1.2	Power supply, 120 VAC In to 24 VAC/24 VDC Out	**994**
DCP-1.5-W	Power supply, 24 VAC IN to 24 VDC OUT	**995**

NEW!

INFRARED DEW POINT & GRAINS TRANSMITTER

9002

DESCRIPTION

The **Amphenol Advanced Sensors VaporStat Model 9002** is an absolute humidity transmitter that measures the amount of water vapor in the air with adversity to temperature variations. The moisture level is then calculated as dew point and transmitted simultaneously as 0-10 VDC and 4-20 mA. A display and keyboard are incorporated for local indication and parameter adjustment. A contact closure is also incorporated with keyboard entries for set point and differential. The **Model 9002** is wall-mounted and available with accessories for duct and OSA applications.

APPLICATION

The **Model 9002** sampling chamber measures the infrared light absorbed by the moisture in the air and processes it as dew point or grains of moisture per pound of dry air. The 0-10 VDC or 4-20 mA output ranges are selected at the keyboard and displayed on the LCD readout. A control contact energizes at the set point entered on the keyboard. The **Model 9002** is ideally suited for local alarm and signaling for clean room controls, desiccant system controls, paper mill controls, and textile process controls as well as condensation prevention.

Amphenol
Advanced Sensors

9002

9002 and T1508 Enclosure

FEATURES

- ***Dew point accuracy ±3.6°F (±2°C)***
- ***0-10V and 4-20 mA output***
- ***Digital display or blank cover***
- ***Patented infrared absorption platform***
- ***Gold-plated element for durability***
- ***Built-in keyboard for range adjust***
- ***Elevation correction via keyboard***
- ***Tamper-resistant keyboard cover***
- ***10-minute field calibration with gas***

SPECIFICATIONS

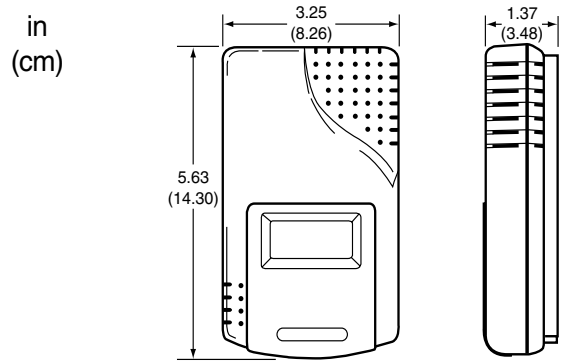
Accuracy	Dew point: ±3.6°F (2.0°C) @ 77°F
Supply Voltage	24 VAC, ±25%, 2.75 VA
Signal Output	simultaneous outputs: 0-10V @ 1000 min 4-20 mA @ 500 max
Relay Output	SPDT, 2A @ 24 VAC
Measurement Range	Dew point: 27° to 80°F (-3° to 27°C)
Sensing Technology	Nondispersive infrared
Calibration	In field with nitrogen gas
Adjustments	Setpoint: Adjustable, full range Differential: Adjustable, full range
Altitude Limits	Correctable to 5000' (1524m)
Keypads	Four-key menu control
Life Expectancy	15 years
Display	Two-line, 1/2" (1.27 cm) LCD
Output Range Adjust	Within 0° to 80°F (-17 to 26°C)
Operating Humidity	0% to 98%
Operating Temperature	32° to 120°F (0° to 50°C)
Warranty	18 months

HUMIDITY

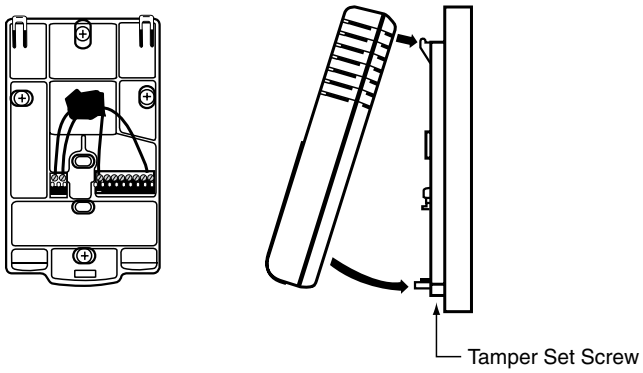
INFRARED DEW POINT & GRAINS TRANSMITTER

9002

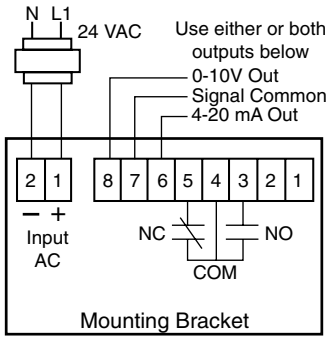
DIMENSIONS



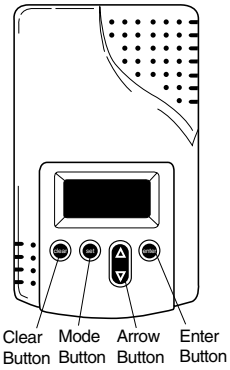
MOUNTING



WIRING



CONTROLS



SETUP

FACTORY OUTPUT SETTINGS

Dew point, 0° to 80°F (-22° to 25°C) @ sea level
Moisture = 0-140 grains per lb of dry air @ sea level
Relay on @ 50°F (10°C), off @ 59°F (15°C)

CHANGING SETTINGS

1. Press mode and clear at the same time for five seconds to enter the adjust mode.
2. Press mode key to display item to change: elevation, dew point, grains, or relay.
3. Use arrow keys to select ranges.
4. Press enter to confirm selection.
5. Press clear to finish and return to normal display.

ORDERING INFORMATION

MODEL	DESCRIPTION
9002	Dew point and grains 0-10 VDC/4-20 mA transmitter and SPDT contact

	RELATED PRODUCTS	PAGE
T1508	Duct-mount accessory enclosure	
T1551	OSA-mount accessory enclosure	
691-K0A	Control transformer, 120:24 VAC, 40 VA, Class 2	**979**

3% HUMIDISTATS
VH7200 SERIES

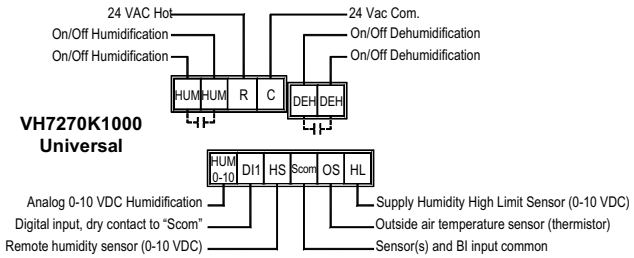
DESCRIPTION

The **Viconics VH7200 Series Humidistats** are designed for controlling humidification and dehumidification equipment in HVAC and energy management systems. The humidistat utilizes a PI time proportional control algorithm to accurately control relative humidity. The **VH7200 Series** features adjustable control setpoint, and the ability to set the maximum number of output cycles from 3 to 8 per hour. Units accept a remote outdoor air temperature sensor which can be used to reset the humidity set point-minimizing energy consumption and condensation on windows and building structures. The high limit protection (available only on **Model VH7270** when used with a remote humidity sensor) prevents damage due to over-humidification.

FEATURES

- ***Designer wall mounting***
- ***3% RH control accuracy***
- ***Two status LEDs***
- ***Proportional high limit override eliminates condensation problems***
- ***Sensor failure protection***
- ***Outdoor temperature reset***
- ***Keypad lockout***
- ***Backlit LCD two line display***

WIRING



SPECIFICATIONS

Accuracy	±5% RH (20-100% RH) @ 50°F° to 90°F (10°C to 32°C)	**Resolution**	Humidity 0.1% Temperature ± 0.2°F (±0.1°C)
Supply Voltage	19-30 VAC, 50/60 Hz; 2 VA	**Operating Humidity**	0 to 95% RH non-condensing
Signal Output	0-10 VDC, 2 kΩ minimum load impedance	**Operating Temperature**	32° to 122°F (0° to 50°C)
Relay Output	1A continuous, 3A in-rush maximum @ 30 VAC	**Temperature Range**	Outdoor Air: -40° to 122°F (-40° to 50°C)
Setpoint Range	Humidification 10 to 90% RH Dehumidification 15 to 95% RH	**Enclosure**	ABS plastic
Binary Inputs	Relay dry contact	**Wiring Terminations**	Screw terminals
Sensing Technology	Bulk polymer	**Dimensions**	4.9"H x 3.4"W x 1.1"D (12.4 x 8.6 x 2.8 cm)
Display	Two line, 16 character LCD	**Approvals**	UL File E27734, CSA, CE
		Weight	0.5 lb (0.23 Kg)
		Warranty	1 year

ORDERING INFORMATION

MODEL	DESCRIPTION
VH7200A1000	Humidistat, on/off (humidify), on/off (dehumidify)
VH7270F1000	Humidistat, 0-10 VDC (humidify), on/off (dehumidify)
VH7270K1000	Humidistat, 0-10 VDC and on/off (humidify), on/off (dehumidify)

	RELATED PRODUCTS	PAGE
691-K0A	Control transformer, 120:24 VAC, 40 VA, Class 2	**979**
HD20K	2% duct-mount humidity sensor	**511**
KHD2	2% duct mount humidity transmitter, 4-20 mA output	**509**
KTO24	OSA thermistor sensor, Type 2, model 24, ±0.5°F (0.28°C)	**1216**
ST-O24	OSA thermistor sensor, Type 2, model 24, ±0.36°F (0.20°C)	**1217**

HUMIDITY

5% DUCT MOUNT HUMIDSTAT

TDC SERIES

DESCRIPTION

The **Vector Model TDC-BH-U Duct Mount Humidistat** is a stand-alone programmable electronic humidistat designed for controlling humidification and dehumidification equipment in HVAC and energy management systems. The **TDC-BH-U Series** features one internal humidity sensor, one external temperature sensor input and two relay outputs. Humidity reset is possible using the **ST-O24** outdoor air temperature sensor for cold weather applications to prevent condensation. The **TDC-BH-U-D Series** comes with all of the features of the base model plus a time clock feature for advanced programming with 48 hour backup.

TDC-BH-U

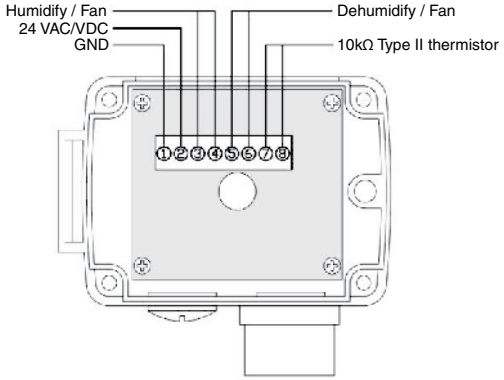
FEATURES

- ***Humidification and Dehumidification control***
- ***External temperature input for set point setback***
- ***Programmable user interface***
- ***Optional time clock***
- ***2 relay outputs***
- ***Easy to read display***
- ***Replaceable sensor***

SPECIFICATIONS

Accuracy	±5% RH (10-90%)	**Operating Temperature**	32° to 122°F (0° to 50°C)
Supply Voltage	24 VAC ±10%, 50-60 Hz 1.5 VA, 24 VDC, 63 mA	**Enclosure Rating**	Polycarbonate PC (UL class V-0)
Anolog Input	10K Type II (Type 24) thermistor	**Wiring Terminations**	Terminal block (12 to 24 AWG
Relay Output	2 NO SPST Relays, 2 Amps @ 24 VAC	**Approvals**	CE
Operating Humidity	0% to 95% non-condensing	**Weight**	0.48 lb (0.22 kg)
		Warranty	2 years

CONNECTION TERMINALS

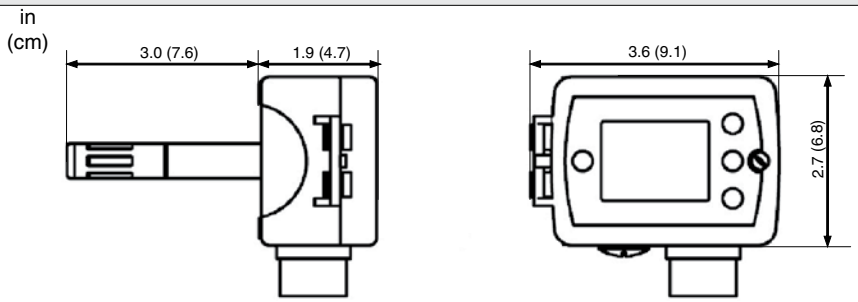


Terminal-description:

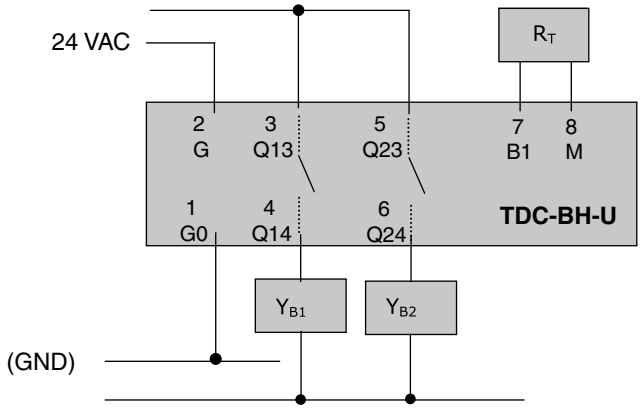
1. Connection for power-supply (24 VAC/VDC, ±10%). In case of DC, connect the negative power-terminal. Common connection for analog inputs and outputs.
2. Connection for power-supply (24 VAC/VDC, ±10%). In case of DC, connect the positive power-terminal.
3. Contact “DO 1” Humidify or Fan, 2A maximum
4. Contact “DO 1” Humidify or Fan, 2A maximum
5. Contact “DO 2” Dehumidify or Fan, 2A maximum
6. Contact “DO 2” Dehumidify or Fan, 2A maximum
7. Thermistor input “RT” (10kΩ Type II thermistor)
8. Thermistor input “RT” (10kΩ Type II thermistor)

5% DUCT MOUNT HUMIDSTAT
TDC SERIES

DIMENSIONS



WIRING



Humidify / Dehumidify, TDC-BH-U (-D)

Y_{B1}	Binary output 1: Humidify	0 to 24 VAC or 0 to 30 VDC
Y_{B2}	Binary output 2: Dehumidify	0 to 24 VAC or 0 to 30 VDC
R_T	Temperature input for setback:	10kΩ Type II thermistor

Humidify plus fan control, TDC-BH-U (-D) – W04

Y_{B1}	Binary output 1: Humidify	0 to 24 VAC or 0 to 30 VDC
Y_{B2}	Binary output 2: Fan	0 to 24 VAC or 0 to 30 VDC
R_T	Temperature input for setback:	10kΩ Type II thermistor

Dehumidify plus fan control, TDC-BH-U (-D) – W05

Y_{B1}	Binary output 1: Fan	0 to 24 VAC or 0 to 30 VDC
Y_{B2}	Binary output 2: Dehumidify	0 to 24 VAC or 0 to 30 VDC
R_T	Temperature input for setback:	10kΩ Type II thermistor

ORDERING INFORMATION

MODEL	DESCRIPTION
TDC-BH-U-W20	5% duct mount humidistat for humidification and dehumidification with display
TDC-BH-U-W24	5% duct mount humidifying humidistat with display and fan control option
TDC-BH-U-W25	5% duct mount dehumidifying humidistat with display and fan control option
TDC-BH-U-D-W20	5% duct mount humidistat for humidification and dehumidification with display with programmable time clock
TDC-BH-U-D-W24	5% duct mount humidifying humidistat with display, fan control option and programmable time clock
TDC-BH-U-D-W25	5% duct mount dehumidifying humidistat with display, fan control option and programmable time clock

	RELATED PRODUCTS	PAGE
AES-HT-A5	5% Replacement humidity element	
AMC-1	Cable gland for SDC-H1	
AMC-2	Conduit fitting, 1/2 in NPT for SDC-H	
ST-R24	Raw temperature sensor with six foot cable, 10kΩ Type II thermistor	**1247**
ST-D24	Eight inch duct sensor with six foot cable, 10kΩ Type II thermistor	**1197**
SD-TN10-20-2	Eight inch duct sensor with six foot cable, 10kΩ Type II thermistor	
SDB-TN10-12-W	Five inch duct sensor with housing and six foot cable, 10kΩ Type II thermistor	
SDB-TN10-20-W	Eight inch duct sensor with housing and six foot cable, 10kΩ Type II thermistor	
ST-O24	Outdoor temperature sensor	**1217**
DCPA-1.2	Power supply, 120 VAC IN to 24 VAC/24 VDC OUT	**994**
691-K0A	Control transformer, 120:24 VAC, 40 VA, Class 2	**979**
DCP-1.5-W	Power supply, 24 VAC IN to 24 VDC OUT	**995**

HUMIDITY

5% WALL MOUNT HUMIDISTAT

TCY-BH SERIES

DESCRIPTION

The **Vector Model TCY-BH-U Wall Mount Humidistat** is a stand-alone programmable electronic humidistat designed for controlling humidification and dehumidification equipment in HVAC and energy management systems. The **TCY-BH-U Series** features one internal humidity sensor, one external temperature sensor input and two relay outputs. Humidity reset is possible using the **ST-024** outdoor air temperature sensor for cold weather applications to prevent condensation. The **TCY-BH-U-D Series** comes with all of the features of the base model plus a time clock feature for advanced programming with 48 hour backup.

VECTOR

TCY-BH-U

CE

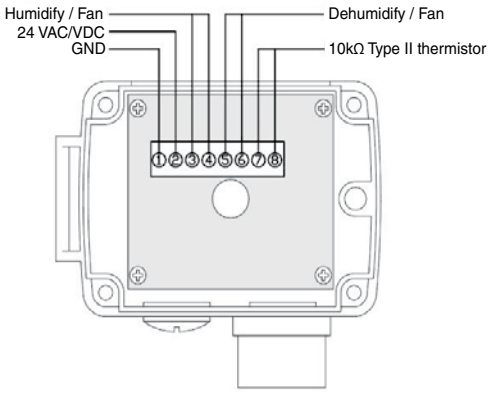
FEATURES

- ***Humidification and dehumidification control***
- ***External temperature input for set point setback***
- ***Programmable user interface***
- ***Optional time clock***
- ***2 relay outputs***
- ***Easy to read display***
- ***Replaceable sensor***

SPECIFICATIONS

Supply Voltage	24 VAC ±10%, 50-60 Hz 3 VA, 24 VDC, 125 mA	**Operating Temperature**	32° to 122°F (0° to 50°C)
Accuracy	±5% RH (10-90%)	**Enclosure Rating**	ABS plastic (UL94 class V-0)
		Wiring Terminations	Terminal block (12 to 24 AWG)
Anolog Input	10k Type II (Type 24) Thermistor	**Dimensions**	4.4"H x 2.9"W x 1.8"D (11.2 x 7.3 x 4.7 cm)
Relay Output	2 NO SPST Relays, 2 Amps @ 24 VAC	**Approvals**	CE
		Weight	0.58 lb (0.26 kg)
Operating Humidity	0% to 95% non-condensing	**Warranty**	2 years

CONNECTION TERMINALS

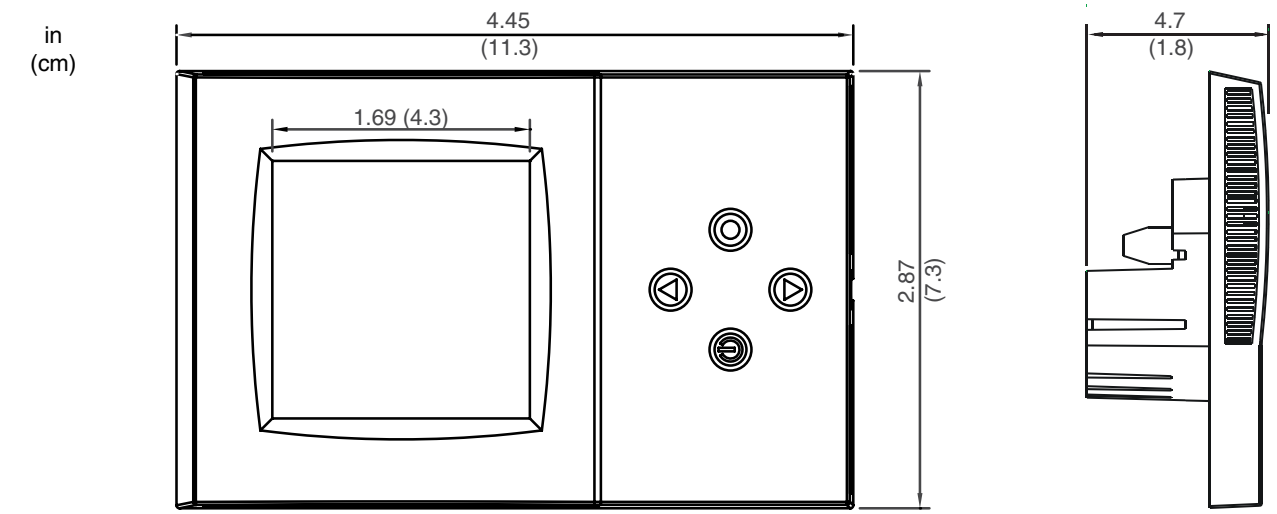


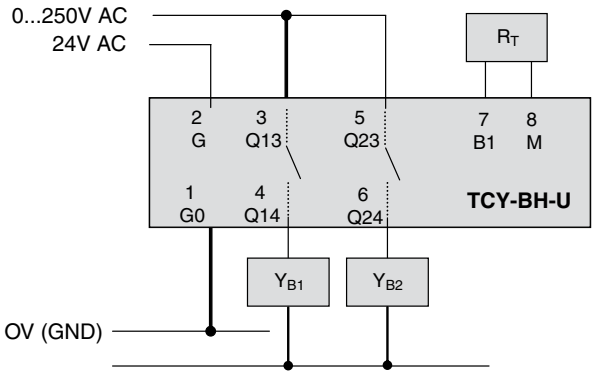
Terminal-description:

1. Connection for power-supply (24 VAC/VDC, ±10%). In case of DC, connect the negative power-terminal. Common connection for analog inputs and outputs.
2. Connection for power-supply (24 VAC/VDC, ±10%). In case of DC, connect the positive power-terminal.
3. Contact “DO 1” Humidify or Fan, 2A maximum
4. Contact “DO 1” Humidify or Fan, 2A maximum
5. Contact “DO 2” Dehumidify or Fan, 2A maximum
6. Contact “DO 2” Dehumidify or Fan, 2A maximum
7. Thermistor input “RT” (10kΩ Type II thermistor)
8. Thermistor input “RT” (10kΩ Type II thermistor)

5% WALL MOUNT HUMIDISTAT
TCY-BH SERIES

DIMENSIONS / WIRING





Humidify/Dehumidify, TCY-BH-U (-D)

YB1	Humidifier	0…24 VAC or 0…30 VDC
YB2	De-humidifier	0…24 VAC or 0…30 VDC
RT	Temperature input for setback:	NTC 10kΩ @ 25°C (77°F)

Humidify plus fan control, TCY-BH-U (-D) – W04

YB1	Humidifier	0…24 VAC or 0…30 VDC
YB2	Fan	0…24 VAC or 0…30 VDC
RT	Temperature input for setback:	NTC 10kΩ @ 25°C (77°F)

Dehumidify plus fan control, TCY-BH-U (-D) – W05

YB1	Fan	0…24 VAC or 0…30 VDC
YB2	De-humidifier	0…24 VAC or 0…30 VDC
RT	Temperature input for setback:	NTC 10kΩ @ 25°C (77°F)

ORDERING INFORMATION

MODEL	DESCRIPTION
TCY-BH-U-W20	5% wall mount humidistat for humidification and dehumidification with display with programmable time clock
TCY-BH-U-W24	5% wall mount humidifying humidistat with display, fan control option and programmable time clock
TCY-BH-U-W25	5% wall mount dehumidifying humidistat with display, fan control option and programmable time clock
TCY-BH-U-D-W20	5% wall mount humidistat for humidification and dehumidification with display
TCY-BH-U-D-W24	5% wall mount humidifying humidistat with display and fan control option
TCY-BH-U-D-W25	5% wall mount dehumidifying humidistat with display and fan control option

RELATED PRODUCTS		PAGE
AES-HT-A5	5% Replacement humidity element	
AMC-1	Cable gland for SDC-H1	
AMC-2	Conduit fitting, 1/2 in NPT for SDC-H	
S-TN10-2	Raw temperature sensor with six foot cable, 10k Type II thermistor	
SD-TN10-12-2	Eight inch duct sensor with six foot cable, 10k Type II thermistor	
SD-TN10-20-2	Eight inch duct sensor with six foot cable, 10k Type II thermistor	
SDB-TN10-12-W	Five inch duct sensor with housing and six foot cable, 10k Type II thermistor	
SDB-TN10-20-W	Eight inch duct sensor with housing and six foot cable, 10k Type II thermistor	
SOD-TN10	Outdoor temperature sensor	
DCPA-1.2	Power supply, 120 VAC IN to 24 VAC/24 VDC OUT	**994**
691-K0A	Control transformer, 120:24 VAC, 40 VA, Class 2	**979**
DCP-1.5-W	Power supply, 24 VAC IN to 24 VDC OUT	**995**

HUMIDITY

3% WALL AND DUCT PROPORTIONAL CONTROLLER

TCI SERIES

DESCRIPTION

The **Vector Model TCI Wall and Duct Proportional Controller** is designed for proportional control of humidification and dehumidification equipment in HVAC and energy management systems. The "23" models comes with a time clock for advanced programming with 48 hour backup and the "13" models do not. The "H" models have internal relative humidity sensors and the others without "H" in model number must use a remote relative humidity sensor (ordered separately) for RH measurement.

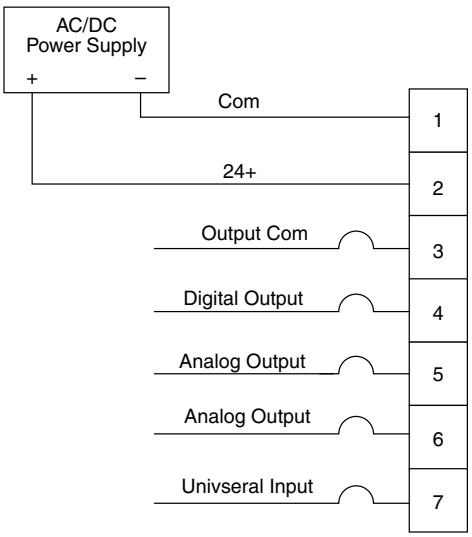
FEATURES

- ***Humidification and dehumidification control***
- ***External temperature input for set point setback***
- ***Programmable user interface***
- ***Optional time clock***
- ***2 analog outputs and one digital output***
- ***Easy to read display***

TCI

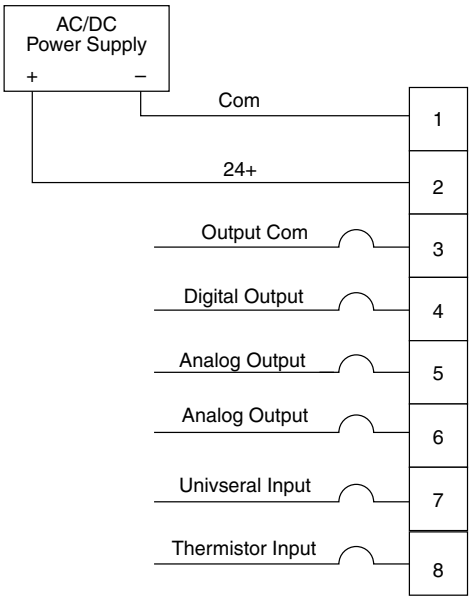
SPECIFICATIONS			
Supply Voltage	24 VAC ±10% 3 VA, 50-60 Hz; 24 VDC, 125 mA	**Operating Temperature**	32° to 122°F (-25° to 50°C)
Accuracy	±3% RH (20%-80%)	**Enclosure Rating**	ABS Plastic
Signal Output		**Sensing Technology**	Capacitive sensor
Analog	0/2-10 VDC or 0/4-20 mA @250	**Wiring Terminations**	Terminal block (12 to 24 AWG)
Digital	24 VAC/VDC @ 2 A	**Dimensions**	4.4" H x 2.9" W x 1.8" D (11.2 x 7.3 x 4.7 cm)
Signal Input		**Approvals**	CE
13	0/2-10 VDC or 0/4-20 mA @ 240	**Weight**	
23	0/2-10 VDC or 0/4-20 mA @ 240 & 10k Type II thermistor (24)	**13**	0.58 lb (0.26 Kg)
Measurement Range	0 to 100 % RH	**23**	0.6 LB (0.27 kG)
Operating Humidity	0% to 95% non-condensing	**Warranty**	2 years

WIRING



13 Models

Logic:
13 models with "U" in model number
#7 is Remote Temperature
13 models with "U" in modle number
#7 is Remote Humidity



23 Models

Logic:
23 models with "U" in model number
#7 is Remote Humidity or Temperature
#8 is Temperature only
23 models with "U" in modle number
#7 is Remote Humidity
#8 is Temperature only

ORDERING INFORMATION

MODEL	DESCRIPTION
TCY3-T1102-H-U-W24	3% wall mount proportional humidistat with display for humidification
TCY3-T1102-H-U-W25	3% wall mount proportional humidistat with display for dehumidification
TCY3-T1102-H-U-D-W24	3% wall mount proportional humidistat with display for humidification plus clock and time schedules
TCY3-T1102-H-U-D-W25	3% wall mount proportional humidistat with display for dehumidification plus clock and time schedules
TCY3-T1102-U-W26	Wall mount proportional humidistat with display for humidification
TCY3-T1102-U-W27	Wall mount proportional humidistat with display for dehumidification
TCY3-T1102-U-D-W26	Wall mount proportional humidistat with display for humidification plus clock and time schedules
TCY3-T1102-U-D-W27	Wall mount proportional humidistat with display for dehumidification plus clock and time schedules

RELATED PRODUCTS		PAGE
HD30K	AMC-2 Conduit fitting, 1/2 in NPT for SDC-H	**530**
KHD3	3% Duct mount humidity transmitter, 4-20 mA output	**528**
DCPA-1.2	Power supply, 120 VAC IN to 24 VAC/24 VDC OUT	**994**
691-K0A	Control transformer, 120:24 VAC, 40 VA, Class 2	**979**
DCP-1.5-W	Power supply, 24 VAC IN to 24 VDC OUT	**995**
ST-D24-XH	Duct 10K Tpye II thermistor with handi box	

HUMIDITY

CONDENSATION MONITOR
EE46

DESCRIPTION

The **E+E EE46 Condensation Monitors** are used to monitor the formation of condensation on chilled ceilings or to prevent condensation at critical spots of heating, ventilation and air conditioning systems. It is also used as a dew point monitor for systems operating near the dew point.

The condensation monitor measures the relative humidity near the dew point using its high-quality capacitive sensor. Once a 90% RH condition is reached, a contact will energize signaling an approaching condensation condition and that an appropriate action is required to avoid condensation forming. An additional status light indicates and visually confirms the condensation danger.

The **EE46** is highly insensitive to dust and dirt and is ideal for mounting on walls, ducts and pipes up to 2". Each EE46 comes with an adjustable and removable cable tie for mounting but also has an adhesive back for added security.

EE46

FEATURES

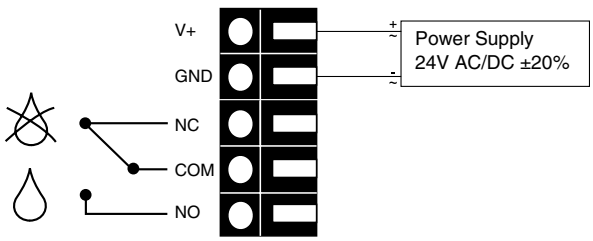
- ***Compact design***
- ***Fast response time***
- ***Dust protection***
- ***Easy mounting***
- ***Visual status indication***

SPECIFICATIONS

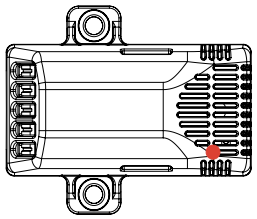
Supply Voltage	24 VAC ±20%. 0.1 VA; 24 VDC ±20%, 3 mA
Switch Point	90% RH, ±3%
Relay Output	24 VAC/VDC, 1A
Display	Single red LED
Operating Humidity	10 to 100% RH
Operating Temperature	32˚ to 122˚F (0˚ to 50˚C)
Materials Of Construction	Polycarbonate
Enclosure Rating	Fire resistant UL94-V0
Dimensions	2.5" H x 2.1" W x 0.9" D (6.4 x 5.3 x 2.2 cm)
Approvals	CE
Weight	0.13 lb (0.95 Kg)
Warranty	1 year

WIRING

Connection Diagram



Status Indication



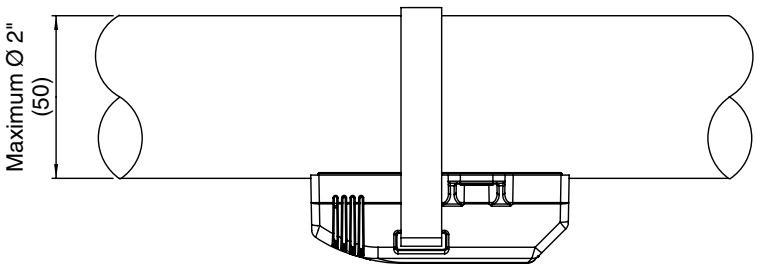
LED continuous red: Operating < 90% RH

LED blinking red: Condensation danger

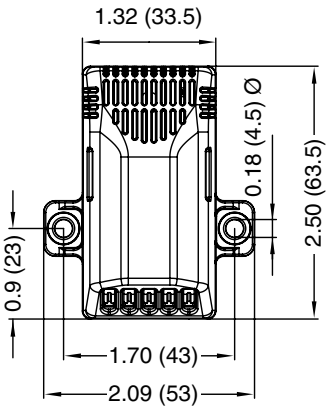
DIMENSIONS

Dimensions - in (mm)

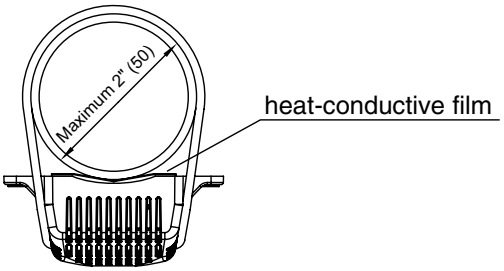
Pipe mounting

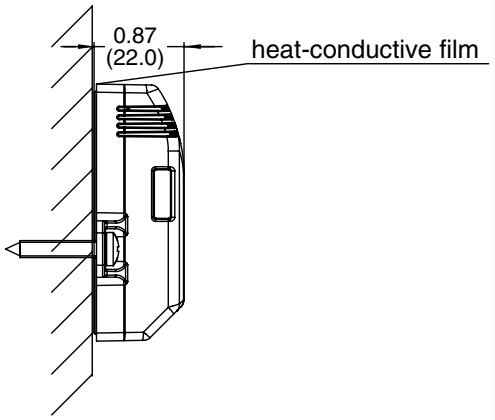


Wall mounting



Installation





ORDERING INFORMATION

MODEL	DESCRIPTION
EE46	Pipe, wall or duct mounted condensation monitor

HUMIDITY

ROOM AND DUCT HUMIDISTATS

HC-101, HC-201

DESCRIPTION

The **Schneider Electric Models HC-101** and **HC-201 Humidistats** are used for low or line voltage ON/OFF single-stage control of humidifiers, dehumidifiers, valves, solenoids, compressors, relays, and other electrical components.

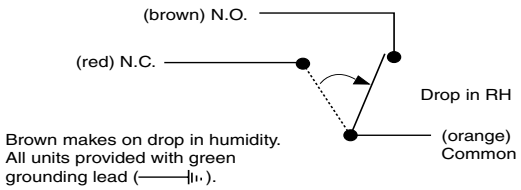
FEATURES

- ***18-month warranty***
- ***Economical and reliable humidity control***

HC-101

HC-201

WIRING



MAXIMUM ELECTRICAL RATINGS

MODEL	VAC 50/60 Hz	FLA	LRA	RESISTIVE AMPS	PILOT DUTY VA
HC-101	24	—	—	8	60
HC-201	120	7.2	43.2	8	345

SPECIFICATIONS / ORDERING INFORMATION

MODEL	DESCRIPTION	SCALE RANGE	DIFF	AMBIENT LIMITS °F (°C)		CONNECTION	WEIGHT	COVER	DIMENSIONS in (cm) (HxWxD)
				Operating	Shipping and Storage				
HC-101	Room	10% to 90%	RH 5%	40 to 125 (4 to 52)	-40 to 140 (-40 to 60)	6" (15.0 cm) Color-coded leads	1.0 lb (0.45 kg)	Beige plastic	4.38 x 2.88 x 1.63 (11.13 x 7.32 x 4.14)
HC-201	Duct	15% to 95%	RH 5%	40 to 125 (4 to 52)	-40 to 140 (-40 to 60)	Coded screw terminals	1.5 lb (0.68 kg)	Metal	4.38 x 6.50 x 2.25 (11.13 x 16.51 x 5.72)

ROOM HUMIDISTAT

W43A-14

DESCRIPTION

The SPDT contact action of the **Johnson Controls Model W43A-14 Humidistat** provides control of humidifying or dehumidifying equipment. A flush-mounting bracket that fita a standard outlet box is supplied. The **Model W43A** features field-adjustable high and low stops. Stops can be set for locked setting.

ACCESSORIES

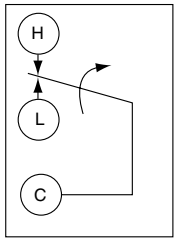
The **Model W43A-14** includes A faceplate for horizontal mounting. The plate is for on-the-job installation over vertical plate. It can be field converted to concealed adjustment. Specify plate kit **PLT333-12R** (vertical) or **PLT333-9R** (horizontal).

FEATURES

- ***One-year warranty***
- ***Horizontal or vertical mounting***

W43A-14

WIRING



Action on increase of humidity

DIMENSIONS

MODEL	SWITCH ACTION	RANGE	DIFF %	DIMENSIONS in (cm) (HxW)
W43A-14	SPDT	0% to 70% RH	4% RH	4.71 x 2.96 (12.0 x 7.5)

MAXIMUM ELECTRICAL RATINGS

MOTOR RATINGS VAC	120	208	240	WEIGHT lb (kg)
AC full load amps	6.0	3.5	3.0	1.0 (0.45)
AC locked rotor amps	36.0	21.0	18.0	—
Pilot Duty 125 VA, 24-277 VAC (low or line voltage)				

ORDERING INFORMATION

MODEL	DESCRIPTION
W43A-14C	SPDT switch action, 4% RH Diff % Humidistat

OUTDOOR ASPIRATED HUMIDITY / TEMPERATURE HOUSING

A21

DESCRIPTION

Model A21 Outdoor Aspirated Humidity/Temperature Housing provides powered aspiration for outdoor monitoring of humidity and temperature. The NEMA 3R enclosure is painted white to reduce the effect of radiation, and the enclosure has a lockable latch for security.

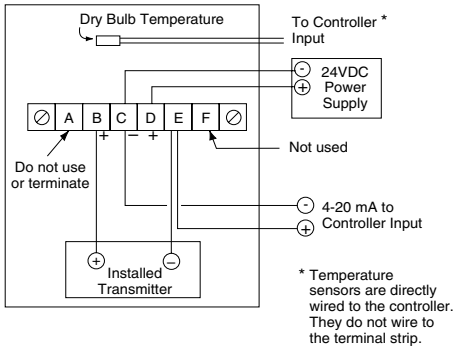
OPERATION

The fan pulls air in from the lower vent intake and exhausts the air out the upper opposing vent of the enclosure at 12 CFM. The 24 VDC power is supplied for both the fan and transmitters. The transmitter power is internally filtered from any fan motor noise that might affect the transmitter signal.

SPECIFICATIONS

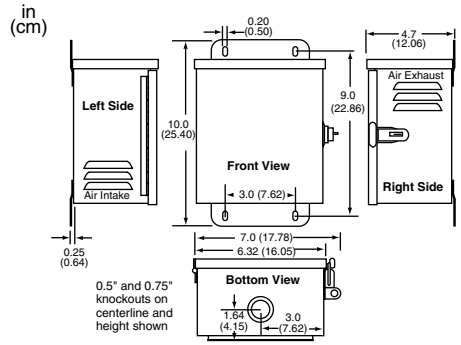
Supply Voltage	24 VDC @ 110 mA (plus power requirements for the humidity/ temperature transmitters)
Maximum Output Impedance	47Ω added to the 4-20 mA transmitter
Fan	12 CFM
Filter Type	Washable foam filter
Operating Temperature	-40° to 120°F (-40° to 49°C)
Enclosure Rating	NEMA 3R with white enamel paint and latch for padlock
	Hinge Piano-type, left-hand side
Weight	6.31 lb (2.9 Kg)
Warranty	1 year

WIRING

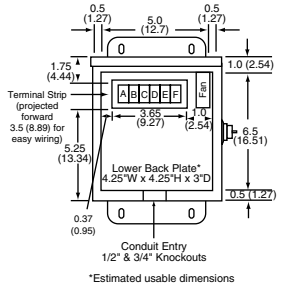

Dry Bub Temperature
To Controller * Input
24VDC Power Supply
A B C D E F
Not used
Do not use or terminate
4-20 mA to Controller Input
Installed Transmitter
* Temperature sensors are directly wired to the controller. They do not wire to the terminal strip.

A21

DIMENSIONS



Mounting


Terminal Strip (projected forward 3.5 (8.89) for easy wiring)
Lower Back Plate* 4.25"W x 4.25"H x 3"D
Conduit Entry 1/2" & 3/4" Knockouts
*Estimated usable dimensions

Interior

ORDERING INFORMATION

MODEL	DESCRIPTION
A21	Outdoor aspirated humidity/temperature housing

	RELATED PRODUCTS	PAGE
A21-FAN	Replacement fan assembly	
DCP-1.5-W	Power supply, 24 VAC IN to 24 VDC OUT	**995**
DCPA-1.2	Power supply, 120 VAC IN to 24 VAC/24 VDC OUT	**994**
HW20K	2% wall-mount humidity sensor	**511**
HW30K	3% wall-mount humidity sensor	**530**
KTM* Series	KTM* Series raw encapsulated thermistor and RTD sensors	**1245**
PN-46	Aluminum sensor holder with adhesive backing	**1298**
ST-R* Series	ST-R* Series raw encapsulated thermistor and RTD sensors	

HUMIDITY

HUMIDITY SELECTION CHART

HUMIDITY SELECTION CHART

PRODUCT	MNFR	ACCURACY	MOUNTING	SIGNAL	MEASUREMENT	ATTRIBUTES	APPLICATION
W43A-14	JCI	4% diff.	Wall	SPDT	RH	Accuracy	Limit control
HC-101	Schneider	5% diff.	Wall	SPDT	RH	Aesthetics	Limit control
HC-201	Schneider	5% diff.	Duct	SPDT	RH	Duct	Limit control
GEH5S	GE	5%	Wall	4-20/0-10	RH/T optional	Replaceable sensor	Monitoring
SHR-5P-W	Setra	5%	Wall	4-20/0-10	RH	Replaceable sensor	Monitoring
GEH5D	GE	5%	Duct	4-20/0-10	RH/T optional	Replaceable sensor	Monitoring
SRH-5P-D	Setra	5%	Duct	4-20/0-10	RH	Replaceable sensor	Monitoring
GEH5O	GE	5%	OSA	4-20/0-10	RH/T optional	Replaceable sensor	Monitoring
SRH-5P-O	Setra	5%	OSA	4-20/0-10	RH	Replaceable sensor	Monitoring
KHR3	Kele	3%	Wall	4-20 mA	RH/T optional	Replaceable sensor	Monitoring
SHR-3P-W	Setra	3%	Wall	4-20 mA	RH	Replaceable sensor	Monitoring
HW30K/HW31K	Kele	3%	Wall	4-20 mA	RH/T optional	Executive housing	Monitoring
HMW40/50	Vaisala	3%	Wall	4-20/0-10	RH/T optional	Replaceable sensor	Monitoring
ACI-3-R	ACI	3%	Wall	4-20/0-10	RH/T optional	Delta housing	Monitoring
BA/H300-B	BAPI	3%	Wall	4-20/0-5	RH/T optional	BAPI housing	Monitoring
KHD3	Kele	3%	Duct	4-20 mA	RH/T optional	Replaceable sensor	Monitoring
SHR-3P-D	Setra	3%	Duct	4-20 mA	RH	Replaceable sensor	Monitoring
HD30K/31K	Kele	3%	Duct	4-20 mA	RH/T optional	Metal/universal enclosure	Monitoring
HMD40/50	Vaisala	3%	Duct	4-20/0-10	RH/T optional	Replaceable sensor	Monitoring
ACI-3-D	ACI	3%	Duct	4-20/0-10	RH/T optional	4-20 mA and 0-10V	Monitoring
BA/H300-D	BAPI	3%	Duct	4-20/0-5	RH/T optional	4-20 mA and 0-5V	Monitoring
KHO3	Kele	3%	OSA	4-20 mA	RH/T optional	Replaceable sensor	Monitoring
SHR-3P-O	Setra	3%	OSA	4-20 mA	RH	Replaceable sensor	Monitoring
HO30K	Kele	3%	OSA	4-20 mA	RH/T optional	Metal enclosure	Monitoring
HO31K	Kele	3%	OSA	4-20 mA	RH/T optional	Universal enclosure	Monitoring
ACI-3-O	ACI	3%	OSA	4-20/0-10	RH/T optional	4-20 mA and 0-10V	Monitoring
BA/H300-O	BAPI	3%	OSA	4-20/0-5	RH/T optional	4-20 mA and 0-5V	Monitoring
VH7200	Viconics	3%	Wall	0-10 V	RH	Humidistat	Limit control
KHR2	Kele	2%	Wall	4-20 mA	RH/T optional	Replaceable sensor	RH control
HW20K	Kele	2%	Wall	4-20 mA	RH/T optional	Executive housing	RH control
ACI-2-R	ACI	2%	Wall	4-20/0-10	RH/T optional	Delta housing	RH control
GEH2S	GE	2%	Wall	4-20/0-10	RH/T optional	Replaceable sensor	RH control
EHRH	GE	2%	Wall	4-20 mA	RH/T optional	Wash-down housing	RH control, pool
HT2-S	Minco	2%	Wall	4-20 mA	RH/T optional	Minco housing	RH control
HT829-S	Minco	2%	Wall	4-20 mA	RH, RH/T	One-point calibration	RH control
HMW-60U	Vaisala	2%	Wall	4-20 mA	RH/T optional	Vaisala housing	RH control
HMW-70U	Vaisala	2%	Wall	0-5 VDC	RH/T optional	Voltage output	RH control
BA/H200-B	BAPI	2%	Wall	4-20/0-5	RH/T optional	BAPI housing	RH control
KHD2	Kele	2%	Duct	4-20 mA	RH/T optional	Replaceable sensor	RH control
HD20K	Kele	2%	Duct	4-20 mA	RH/T optional	Metal enclosure	RH control
ACI-2-D	ACI	2%	Duct	4-20/0-10	RH/T optional	4-20 mA and 0-10V	RH control
GEH2D	GE	2%	Duct	4-20/0-10	RH/T optional	Replaceable sensor	RH control
HT2D	Minco	2%	Duct	4-20 mA	RH/T optional	Metal enclosure	RH control
HT829-D	Minco	2%	Duct	4-20 mA	RH, RH/T	One-point calibration	RH control
HMD-60U	Vaisala	2%	Duct	4-20 mA	RH/T optional	Metal enclosure	RH control
HMD-70U	Vaisala	2%	Duct	0-5 VDC	RH/T optional	Metal enclosure	RH control
BA/H200-D	BAPI	2%	Duct	4-20/0-5	RH/T optional	4-20 mA and 0-5V	RH control
KHO2	Kele	2%	OSA	4-20 mA	RH/T optional	Replaceable sensor	RH control
HO20K	Kele	2%	OSA	4-20 mA	RH/T optional	Metal enclosure	RH control
ACI-2-O	ACI	2%	OSA	4-20/0-10	RH/T optional	4-20 mA and 0-10V	RH control
GEH2O	GE	2%	OSA	4-20/0-10	RH/T optional	Replaceable sensor	RH control
HT2O	Minco	2%	OSA	4-20 mA	RH/T optional	Metal enclosure	RH control
HT829-O	Minco	2%	OSA	4-20 mA	RH, RH/T	One-point calibration	RH control
BA/H200-O	BAPI	2%	OSA	4-20/0-5	RH/T optional	4-20 mA and 0-5V	RH control
EE29	E&E	1.3%	Wall	4-20/0-5/0-10	RH/T	Metal or plastic housing	Clean room control
ACI/RH1-R	ACI	1%	Wall	4-20 mA	RH/T optional	Executive housing	Clean room control
HT829-S1N1	Minco	1%	Wall	4-20 mA	RH	Minco housing	Clean room control
ACI-RH1-D	ACI	1%	Duct	4-20 mA	RH/T optional	Plastic enclosure	Clean room control
HT829-D1N1	Minco	1%	Duct	4-20 mA	RH	One-point calibration	Clean room control
ACI-RH1-O	ACI	1%	OSA	4-20 mA	RH/T optional	Plastic enclosure	Calculation input
HT829-O1N1	Minco	1%	OSA	4-20 mA	RH	One-point calibration	Calculation input
9002	Telair	1.8F	Wall/Duct	4-20 mA	DP/T	IR measurement	Condensation control

RH Relative Humidity is the ratio of actual water vapor in the air vs. the water vapor that the air can hold at saturation.
DB Dry bulb temperature is the temperature of the air using a dry sensor without any effect from evaporative cooling.
WB Wet bulb temperature is the temperature of the air using a wet sensor, which measures the cooling effect from evaporation.
DP Dew point temperature is the temperature at which water vapor begins to condense into water liquid, which is at 100% RH.
EN Enthalpy is the measure of the heat energy in the air.